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Address*

THE HONORABLE DR. H. A. BRUCE

Lieutenant-Governor, Province of Ontario, Toronto, Canada

It is a great happiness to me to have the opportunity of welcoming you to this Province and to this city. I do so in a dual capacity: First, as the representative of His Majesty, the King; second, in rather a more personal relationship as a member of your own profession and as a teacher in the University of Toronto for many years.

In the latter capacity, I know very well the many difficulties which confront you as teachers responsible for the preparation of the curriculum for the students. I know full well what a great responsibility is placed on you.

The other day I was attending a gathering when a man rose to speak, and he started his remarks in this way: "I am a graduate of Yale, Y-a-l-e. Y stands for youth," and he talked half an hour on youth. "A stands for ability," and he spoke half an hour on ability. "L stands for loyalty," and he held forth half an hour on loyalty. "E stands for equality," and he spoke half an hour on equality. "Gentlemen, that is why I am a graduate of Yale."

Someone in the rear of the room jumped up and said, "Thank God, you are not a graduate of the Massachusetts Institute of Technology."

I noticed I was associated this evening on the toast line with our venerable friend, the distinguished chancellor of this University, Sir William Mulock. He has had rather a busy day in court, where he sat until four-thirty. I had a message from him at five o'clock excusing himself for not being able to attend a meeting of a hospital board at that time. I believe he was to have been here this evening. He is still working and doing good work, and on his next birthday he will be ninety-three. That brings me to the point of suggesting to you that you establish in your medical schools a chair on the preservation of health, and I am going to suggest to the president of our University that they ask Sir William Mulock to be the first occupant of that chair.

*Read at the Forty-sixth Annual Meeting of the Association of American Medical Colleges, held in Toronto, Oct. 28-30, 1935.

Young medical men and older doctors are constantly consulted by patients in regard to some ailment from which they are suffering. You gentlemen, who prepare the curriculum, take care that students receive instruction in every subject that will enable them to diagnose disease, at least when it is definitely present and established. But I am not aware of the fact that you have any course of instruction that will assist these young men to tell people how they are to remain healthy, how to preserve their health. I think it is time that you consider the preservation of health as suitable for a chair in your faculties.

Very few people know just how to take care of their health. Fortunately, the ladies know a good deal more about this than we do. Recently there came to Toronto a young lady from England who has established a branch of the League of Health and Beauty. I understand that already there are a thousand members of this League.

It is all right for the ladies to remain youthful and beautiful, as they will do after taking a course under Miss Stack's instruction, but I feel that medical men should be able to advise their patients how to remain healthy, what to do to preserve their health.

While in England this year, I visited a new institute called the Peckham Health Center. This was established a few years ago by a couple of doctors with the idea of taking care of the health of the families as a group, to consider the family as a unit. In this Center they have a building equipped with offices for two or three doctors, with swimming pools and recreation rooms, dance halls and a gymnasium, a restaurant, a nursery for the babies, rooms for the mothers where they can make clothes, and other rooms where they can play cards or dance and where they can carry on many social activities which would not be possible in their own homes.

This, from a medical point of view, is a very important and interesting experiment. Each adult member of the family is examined when he first becomes a member of this health center. Very often they will find some early evidence of disease and, if they do, they refer the patient to his own doctor or to a hospital. The charge made for all the possible activities in this health center is one shilling per week per family. All the members of the family under sixteen years of age can avail themselves of the privileges of this health center, very much like a club, and it has, I think, wonderful possibilities.

It encourages the family to remain a unit, to stay together. It is not necessary for the father to go one way to find entertainment, and for the wife or the mother to go in another direction, and the children elsewhere. They are all brought together under one roof where provision is made

for their health and for their entertainment. I think we will hear a good deal more in the future of the Peckham Health Center.

This makes one think that the Chinese had the proper idea in regard to the preservation of their health. As you are probably aware, a doctor in China is only paid by the man who engaged him when he is well, and if he becomes sick, the doctor receives no remuneration for attending him during the illness. That, of course, encourages the doctor to keep him well.

I would like to speak just for a moment on irregular practitioners. You have in the United States some 36,000 irregular practitioners, and the amount of money which their clients contribute to them yearly is estimated at the sum of 125 million dollars. When I was in Hamilton the other day a prominent young man, an officer in a local regiment, said, "I had a bad tennis elbow last year. I consulted my doctor and he couldn't do anything for it. He referred me to a surgeon and the surgeon told me he could do nothing for it. So I went to an osteopath. Now my arm is perfectly restored. The other day I slipped and hurt my knee." He described his symptoms, and I assumed he had dislocated one of the semi-lunar cartilages. He said, "I am going down to see my osteopathic friend tomorrow. There is no good in my going to a surgeon about this."

So there is something wrong with the curriculum if it doesn't provide students with sufficient information to enable them after graduation to treat all these ailments, and avoid the necessity of men seeking advice from irregulars.

I remember a good many years ago we did consider in our faculty establishing a course on physical therapy, but nothing happened. We talked about it from year to year without any result. Within the last year the students of the University of Toronto take a course in physical therapy, which will make it unnecessary for any person in the city of Toronto to seek any help from irregular practitioners.

The other day I was looking up the consumption of patent medicines in the United States, and found that the citizens of the United States of America consume annually three hundred and fifty million dollars worth of patent medicines, and, I should think, very much to their disadvantage. In the words of a recent writer: "Of all the rank flowers in the garden of rugged American individualism, few have a more vile and pervasive stench than the huge three hundred and fifty million dollar patent medicine blossom."

In conclusion, I wish you all a happy time in Toronto. I hope your visit here will be interesting and profitable, and that your work for your various colleges will ultimately end in the very best education for medical men to be obtained anywhere in the world will be obtainable on the North American continent.

The Faculty of Medicine of the University of Toronto*

THE HONORABLE AND REVEREND H. J. CODY

President, University of Toronto,
Toronto, Canada

Reference has been made to the longevity of Sir William Mulock, the Chancellor of our university. A good story—*ben trovato se non vero*—is told about one of his experiences in court. It is said that he was trying a case, before he had become Chief Justice of Ontario and head of the Court of Appeal, which involved a lumber dispute in northern Ontario.

In the course of the trial the question of longevity was raised in a rather interesting way. One witness was called, an old man of the North, who gave his evidence in a most remarkably clear and concise fashion. Sir William, at the end of his evidence, is reported to have said, "I thank you for your clear and concise evidence. How old are you?"

"Your Lordship," he replied, "I am eighty-four."

"Eighty-four! You look years younger. Would you mind explaining to me what, in your opinion, is the cause of your longevity?"

"Certainly, my Lord," he said. "All my life I have never tasted a drop of intoxicating liquor, and I attribute my health, strength and longevity to the fact that I have been a strict teetotaler." So he stepped down.

Later in the day the other side called another strong old man of the North to give opposing evidence, and he gave his evidence with equal clarity and force.

Sir William said, "Mr. So-and-so, how old are you?"

"Your Lordship," he said, "I am eighty-six, and I have lived in the north country for years and I know what I am talking about."

"You certainly do," said the Judge. "To what do you attribute your longevity?"

"It is quite simple," your Lordship. "Ever since I was a young man, I have always taken a drink of whisky every night of my life before I went to bed. I attribute my longevity to the fact of having so regularly taken a drink before I slept."

"Well," Sir William said, "your evidence on this point is somewhat contradictory to that of a previous witness. Could you reconcile what was said this morning with what you now say?"

The old man said, "That is quite easily done. If you keep a log out

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of the water on shore and dry all the time, it will last; or if you keep the log in the water all the time it will last. It is this mixing of dry and wet that is fatal to logs and to men."

Whatever prescription Sir William has followed, he is, as His Honor said, well on to ninety-one and still hale and hearty.

However, the subject of longevity is not my proper theme.

On behalf of the University of Toronto, it is a very great pleasure for me to welcome this famous Association to the city of Toronto and within the precincts of the University of Toronto. We know that the Association represents the best medical institutions on the continent. No institution that is not up to a proper standard is admitted to membership. We feel highly honored, indeed, by your presence.

The University of Toronto has a registration of over 7,500 students. Men and women are in a proportion of five to three. We are organized much as your universities are, in faculties; but we have one feature that grew out of our history, and is somewhat akin to the organization of Oxford and Cambridge. In the faculty of arts we have a group of four colleges, and every student in the faculty of arts must register in one of these colleges. He takes part of his instruction in his college, and he takes the rest of it in the general University arts faculty. In this way these different colleges are able to preserve their own traditions, cultivate their own special genius, and make up a varied total in the unity of the University.

We have, further, one unique institution, the institution in which you are holding your meetings, Hart House. It is a great unifying factor in the life of the University. Men from all colleges and all faculties join there at the table, in athletics, and in the manifold intellectual and artistic activities of undergraduates. Hart House meets a deep need in our organization. We have not residential accommodation for all the students who come from homes outside the city, but Hart House makes up for that lack in no small degree. Our one regret is that we have not a parallel organization or institution for the women of the University. I hope in due time that will come.

Of the faculties in the University of Toronto, one that has had a most varied career is the faculty of medicine. Long ago, when the University of Toronto was called Kings College, provision was made for a professor of medicine who was to be the nucleus of the faculty of medicine, and for a few years there actually was a professor of medicine.

However, by a curious turn, a very vigorous personality in the early days of this Province, who was both a lawyer, a member of the Inner Temple and a member of the Royal College of Physicians of the Mother Land, Dr. John Rolph, came to this part of the Dominion. He first prac-

ticed law, was disgusted at a judgment given against him, threw his gown aside and practiced medicine. He established a medical school of his own. In the course of time he became a member of the government and used, when in the government, the full measure of his influence to abolish the University chair in medicine.

So we went on with only a private medical school. We went through the stage when there were three separate private medical schools. The University was the only body legally allowed to confer the degree, but in the course of time, the three became two and each was linked with a University. Still later, I am happy to say, these universities came together and the medical schools were amalgamated into one strong medical faculty. So that our medical school represents a hectic and somewhat turbulent course of development, extending through a good part of the nineteenth century. I am inclined to think that our medical faculty still retains some of those vigorous individual features that marked the more stirring and truculent days of the past. However, we are in peaceful waters now so far as rivalries between medical schools are concerned. The three teaching medical faculties which now exist in this Province are associated with universities and work in happy and harmonious cooperation.

I am glad you have had the opportunity today of visiting the medical buildings and the great central hospital. Naturally, I suppose, the ideal system would be that a medical faculty of a university should have a hospital all its own, entirely controlled by itself. That state of affairs is not, as a rule, possible; so partnerships have to be made between the teaching medical faculty of a university and some great public hospital.

In this city we have as our source of clinical material the Toronto General Hospital, the Sick Children's Hospital, St. Michael's Hospital and the Western Hospital. I think there is a reasonable supply of clinical material. At any rate, I suppose "the material" thinks it is sufficient. There is thus ample opportunity on the clinical side for the medical undergraduate to get a varied experience.

I have just been reading the report on the medical curriculum issued by a committee in the Mother Land appointed and sponsored by the Royal College of Physicians, the Royal College of Surgeons, the Universities of Oxford, Cambridge and London, and the Society of Apothecaries. Lord Dawson of Penn was the chairman. This committee examined the criticisms that are perennially made against existing medical curricula. The report is a masterpiece of condensation and suggestion. I have no doubt its contents will soon be known to all administrative officers of medical teaching colleges on this continent.

But there are several general points in this report which even the best

regulated medical teaching schools would do well to bear in mind. (1.) The committee were of one mind against lengthening the present course of medical study. They think it is long enough as it is. They realize that you cannot teach everything to undergraduates. (2.) They seem to believe that the more you can have of clinical instruction in the undergraduate course, the better it will be for the general practitioner. (3.) They believe there is a tendency, not to be approved, for various departments in the faculty of medicine to regard themselves as water-tight compartments and not to be in as close association with other allied departments as they ought to be. They are all too apt to focus thought on themselves, and practically to forget that there are relevant neighbors with whom there ought to be a reasonable amount of cooperation and mutual understanding. (4.) While the report emphasized the necessity of anatomy and pointed out that it was because of anatomy that medicine grew out of the mists of empiricism and superstition, yet they hold that anatomy should not be a mere test of memory. The main thing is that the student should have a good general knowledge of the human structure, even if he is not able to answer, in detail, everything about the human body. I give that as the suggestion of wise physicians and surgeons in the Mother Land. (5.) Naturally the rare diseases are the interesting diseases. The very common things with which an ordinary practitioner will come in contact when he begins his general practice, are not particularly interesting. They are not spectacular and they are not rare. Indeed, it is quite possible not to pay due attention to them.

After all, a doctor is more than merely a medical man. You remember the famous French epigrammatic epitaph, "Born a man; died a grocer." The idea in the epitaph was that a man might be subdued to his occupation. "Born a man; died a doctor—died a surgeon. Born a man; died a lawyer." Rather should it be, "Born a man; died a greater man with a richer personality." So it is wise to lay a reasonably good general foundation, both literary and scientific. I know that on the scientific side probably sufficient care is given to all the steps, premedical, preclinical and clinical. But a doctor is a leader of thought and opinion in his community. I do not know anyone to whom it would be wiser to entrust a new idea which you wished to be widely known than the doctor. He meets all sorts and conditions of people; meets them in their most receptive times; meets them when they trust him with life itself. So, a doctor ought to be a man of understanding and of culture. He ought to have a broad, human basis for all his strictly scientific and professional training. Every good medical school will see to it that, perhaps before the candidate enters, he satisfies the rightful demands of the community in respect to general preparation.

His Honor has touched a vital point that I would like further to emphasize. When strange methods of medical practice come into existence, attract many patients, seem to improve conditions, and last for a considerable time, the probability is that there is some truth in them. It may be only part of the truth or a truth that is not guarded properly. How are you going to deal with these in the interest of the public? If you make a direct and wholesale attack, you may sweep away a truth, and many people will say that the regular profession is merely jealous of these men who claim to have new light and new technique. The only way to get rid of an error is to put in its place the truth of which, perhaps, it is a perversion or only a partial statement. Therefore, the best way in which to safeguard these methods of manipulation and massage, is to establish proper scientific courses in physical therapy. Such courses have been established recently in our own medical faculty; and I would like publicly to thank Dr. Duncan Graham for his pertinacity in bringing to pass this much needed reform.

I conclude where I began, by assuring you that no body of visitors has ever been more welcome. I hope you will carry back to all parts of the Dominion and particularly to all parts of the great neighboring republic, happy memories of your stay in Toronto. We really feel in the depths of our souls that if the United States of America and the British Empire could by some divine miracle work together and wield influence together on the whole world, there would be no more war, and that this old world would have a far better chance, than she seems at the moment to have, to go forward on the path of peace and prosperity. Be apostles of international good will wherever you are. I hope your gathering in Toronto will lead you to think kindly of Toronto, of Canada, and of the great Empire of which we are proud to form a part.

Activities of the Association of American Medical Colleges*

ROSS V. PATTERSON

President of the Association of American Medical Colleges and
Dean, Jefferson Medical College
Philadelphia, Pennsylvania

As the embodied spokesman of the Association, I desire my first word to be an expression of appreciation of the very generous and kindly reception which has been accorded us as representatives of the various members of the Association. I feel sure we will all carry away with us the most pleasurable recollections of our visit to this wonderful city and this great University, and memories of the many beautiful homes, but, most of all, of the cordial and gracious reception which has been given to us by the charming people of this city.

A year ago I spoke at a similar gathering on the early history of the Association whose representatives are assembled here. This evening I should like to speak of the Association of today. I am aware of the old saying that one may not speak long of himself without vanity, but I hope we may be absolved of that accusation. It may seem presumptuous to some of my fellow members for me to attempt to speak of the Association as it is today, and yet I wonder if even all of our own members appreciate the influence of the Association and of the work which it is doing.

If one thinks about the Association in terms of its influence on the individual student, it becomes apparent that, from the time of his graduation from high school until he enters on the practice of medicine about ten years later, this Association either directly or indirectly influences his career. While he is yet in high school, if he is inclined to the study of medicine, he must choose some college in which to prepare himself for medical study and, applying to that college, he is told of the requirements which he must meet in order to be accepted as a medical student. The requirements presented to him by that college are the requirements specified in the constitution of the Association of American Medical Colleges, to which every member must subscribe and the provisions of which it must observe. Those requirements are a matter of constitutional provision and, at the present time, of course, specify that he must pursue a preparatory course of not less than two years, with certain specified work in science branches.

It is rather interesting to note that over the past few years the quali-

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fications of those admitted to medical study have steadily risen. Last year, of the approximately 6,500 students admitted to the first-year classes of our various medical schools, over half had completed four years of preparation and had been awarded an academic degree. Almost 35 per cent had met a three-year requirement. Only about 15 per cent had had less than three years of preparation, and, of that number, all except a very inconsequential few had pursued more than two years of work. It has been found, as we learned today, that the literary colleges find it almost impossible to encompass into two years the necessary training that will fit men and women for admission to medical study.

These facts, it seems to me, bring us to a point where we should consider advancing the requirements of our Association to not less than three years of college work. The colleges in which students are prepared for the study of medicine will very cordially support such a proposal. After all, it involves only 15 per cent of students, most of whom have already had more than two years of college work and could without great difficulty meet a three-year requirement. Perhaps, after some further consideration of the matter, such a proposal will be made formally. If it is, I hope it will be adopted.

During the course of preparation on which the prospective medical student is engaged, the influence of this Association is very considerable as regards the content of his instruction. Toward the end of his course, whatever it may be, he is subjected to a medical aptitude test, a test which has been fostered and sponsored by this Association and carried on as an experiment for five years. During that time, nearly 50,000 students have taken this test in an endeavor to ascertain whether or not they have special fitness for entrance on the study of medicine. The number of those tested now amounts to about ten thousand per year.

Of course, it is true that many of those who take this test do not enter on medical study, and that not all those who enter on medical study have taken the test. But, if I am correct in my recollection, the number tested is increasing, and for the last three years has been 60, 68 and 75 per cent, respectively, of those admitted to medical study, so that now only about 25 per cent of those admitted have not taken this test. The experimental stage of the test has probably passed. It would seem, perhaps, that we are coming to the point where it should be adopted as a permanent activity of the Association, the results to be used by such of its members as find them useful. If that be so, the test should, of course, be brought more closely into relation with the administration of the affairs of the Association, and an endeavor made to have the test given to all of those who are admitted to medical study.

Next we come, in a chronological order of the activities of the Association, to the study of applicants and applications for admission to medical schools. This has gone on for a period of eight years. Some 100,000 applicants, making 250,000 applications for admission to medical schools, have been studied and selected, and a great deal of information has been gained. When the study began, we were all uncertain as to the actual number of students who were applying, because of the multiple applications. We did not know how many of those who applied were accepted, how many were rejected, what were the reasons for the rejection, and so on. But over a period of eight years we now have in the Association headquarters exact information concerning applications and the disposition of them, and we know that approximately 13,000 students made 33,000 applications each year of the last few years, and that about one-half of them were actually admitted to the first-year classes of the medical schools of the United States and Canada. About 45 per cent of the 13,000 applicants make more than one application, some as many as 20, 30, even 41 applications. In the case of many of these multiple applicants, none of his applications is accepted. Some apply year after year and fail to be accepted.

As a logical follow-up, there has been established a record of student enrolment, so that Association headquarters may have accurate information as to the enrolment of each member college. This record includes such data as amount of preliminary training, names of institutions attended, the student's home address, and certain other details. After this information is compiled by the college it is signed by the student, so that he himself subscribes to the statement and, in addition, places in the Association file his signature as a means of identification in any correspondence that may be carried on with him at a later time.

A logical outgrowth of the record of student enrolment is the student register. The name of every student, from the first to the last class, is placed on an individual card setting forth in detail his record. It is a scholastic record. It sets forth, to begin with, of course, the amount and character of his preliminary training, and the institution or institutions in which it was received. Then, as he goes along in the medical course, each year's record is added, showing whether he continued successfully, whether he had conditions or failures, or whether he was dropped from the rolls and elided from the group of medical students.

In addition to this, there is the record of student accomplishment, which correlates the student's medical school achievement with his work in the college in which he prepared for medical study.

Each year the 6,500 students admitted to the first-year medical classes come from approximately 600 colleges in the United States and Canada.

In the course of a few years, the number of colleges would, of course, considerably exceed 600, since some of them only occasionally contribute a student to the medical student group. Therefore, the total number of colleges whose students' records are on file now, since 1928, considerably exceeds the 600 that will be shown in the register of any one year. Altogether there are now something like 4,500 such college records.

A statement of student accomplishment in the medical schools is transmitted to the colleges in which those students were prepared, in order that these colleges may know what records their students are making. They may also compare the records of their students with those of other colleges sending similar groups into medical school.

In return, the arts colleges send to the Association a report on the standing of those students while in college. It is, thus, possible to correlate the college record and the medical school record of any student, and to compare the scholastic record of students in one college with similar groups from other colleges.

The result of these activities, I think, has been to stimulate the colleges in which medical students are prepared to make greater efforts to prepare their students adequately for medical study.

As a follow-up, and, as a new endeavor, it is now proposed to establish an intern placement bureau, so that those deans who have difficulty in placing their graduates in suitable hospitals may avail themselves of the service of the bureau, in which will be registered the need of hospitals for interns, in the event that they have been unable to fulfil their quota. This service would be utilized, of course, only in those cases in which the medical school itself is unable satisfactorily to place its graduates and the hospital unable satisfactorily to fill its resident staff. This plan has received the cordial endorsement of the American Hospital Association, the American Protestant Hospital Association and the Catholic Hospital Association. Out of it, I hope, may grow a better appreciation on the part of hospitals of their responsibility to continue the medical training of the resident graduate. Certainly, it is proper to assume that hospitals are a necessary part of the medical educational system, and if they are adequately to assume that responsibility, they must make provision for the training of these recent graduates. Something more is necessary than merely giving them bed and board and an opportunity to perform some of the minor services in the hospital. The Association, it seems to me, has a great opportunity to advance the education of the recent graduate by a cooperative effort with the hospitals, and should point out to them what would be the most satisfactory arrangement by which this education may be completed.

Then, of course, there are other activities of the Association. There is our JOURNAL, which has been in existence for ten years—a journal devoted exclusively to medical education. It is not only the only journal of its kind on the American continent; it is the only journal of its kind in the whole world. There is no other such publication—a publication devoted exclusively to medical education, a publication in which are preserved the valuable papers presented at our meetings and, in addition, other papers not so presented but contributed to the JOURNAL directly. It reaches nearly all—perhaps 10,000 of the 12,000—medical teachers in this country. It goes to all the members of the state boards of medical examiners; it goes to medical libraries, and to medical organizations. Curiously enough, it has subscribers in distant parts of the world—Asia, Africa, Europe and South America. There is even one subscriber in far-away Persia. It would be interesting to know just why he is interested in the *Journal of the Association of American Medical Colleges*.

It is, of course, apparent that, with all the data available in Association headquarters, our officers are prepared to supply accurate information not only with regard to those applying for licensure, but with regard to those applying for admission to foreign medical schools. Most of you know of the great concern we have had with regard to that group of students who, failing to gain admission to any of our American or Canadian colleges because of the lack of satisfactory qualifications, went to European schools, where they were accepted without much inquiry. Now, satisfactory relations have been established in the British Empire, in Germany and in Austria, and it is hoped they may be established in other countries, so that inquiries may be directed to our Association regarding these students. In the file of applicants for admission is often found information with regard to repeaters and cheaters, those students who try to get around the requirements enforced against those admitted, or against those admitted and dropped from the rolls because of unsatisfactory scholarship or unsatisfactory character. Should these students be accepted in foreign countries and later attempt to gain a back-door entry into the practice of medicine in America or Canada, the data on file with the Association would be of considerable importance in apprehending them.

OUR NEWS BULLETIN is an addition of recent date, somewhat informal in make-up and intended for the information of executive officers of medical schools, but containing often very valuable information not suitable for publication in our JOURNAL or in other medical journals. Four NEWS BULLETINS have already been sent out since last June. Others will be issued from time to time. They should be very helpful to the executive officers of institutions and save much circularization.

Now, I know that what runs through the minds of some of you, perhaps, is that supplying information with regard to applicants for admission, enrolment and student accomplishment involves you, as executive officers, in considerable labor; but it is to be remembered that there are compensations. It saves much correspondence on your part with state boards, with those colleges which have sent students into medical study and wish to know what records they have made; or with state boards requesting records of certain dubious applicants. All of this labor can be and will be assumed by the Association.

I know I have talked at some length, and I fear, perhaps, somewhat tediously, but it has seemed to me that a review of the activities of our Association might be of some interest if brought to your attention. The Association is, of course, a mutual organization, one intended to be helpful to its members and having as further objectives the advancement of medical education and improvements in medical practice. It wants to do what it can, on the one hand, to stimulate and cooperate with lay colleges for the better preparation of men about to enter the study of medicine; and, on the other hand, to bring about the best possible conditions in hospitals for the better training of interns. If our activities and projects have furthered those objectives, they are certainly worth while. We may have satisfaction and pride in knowing that these things are being done and being well done. Most of all, I feel that one of the primary objectives of the Association is to be mutually helpful and cooperative, and not the least of the value of these gatherings is the personal associations and contacts and the opportunity for informal discussion of small problems, which add very much to the formal programs.

It has been gratifying to me to see the enhancement of interest in the work of the Association, and the cordial way in which our members have cooperated to further these various objectives, and I very much hope that they will continue, that there will be further advancements, and that you may continue to have pleasure and satisfaction in them.

Evaluation of the Medical Aptitude Test*

Report of the Special Committee on the Evaluation of the Aptitude Test for Medical Students

ALAN M. CHESNEY, Baltimore, Chairman
WORTH HALE, Boston, EDWARD S. THORPE, JR., Philadelphia, with the
assistance of CARROLL E. PALMER, Baltimore, Md.

This report will be subdivided into two (2) sections: (1) a presentation of data illustrating the value of the aptitude test in predicting medical school grades; (2) a review of the actual use of the aptitude test in selecting medical students.

I

For purposes of analyzing the value of the aptitude test in predicting medical school success, access was given to all of the records accumulated by Dr. F. A. Moss in the offices of the Committee on Aptitude tests.¹ From these records the following analyses have been made:

(a) For a random group of approximately 800 students, average medical grades have been entirely recomputed and a correlation table prepared to show the association between aptitude score and average medical grade. (Table 5.)

(b) For a random group of approximately 6,000 students, correlation tables showing the association between aptitude score and medical grade were prepared from data selected from Dr. Moss' files. In the preparation of these tables, Dr. Moss' clerical workers are responsible for the calculation of the average medical school grades: the writer is responsible for the preparation of the association tables. (Tables 1, 2, 3, 4.)

(c) For a small group of medical schools; Jefferson Medical College, University of Illinois, The Johns Hopkins Medical School, The University of Maryland, Creighton University and the University of Iowa, correlation tables have been prepared to show, for individual schools, the association between aptitude test and medical school grade. (Tables 7, 8, 9, 10, 11, 12.)

(d) From data submitted in special reports by the Harvard Medical School and Jefferson Medical College, separate analyses have been made for purposes which will be brought out later. (Tables 6 and 13.)

With the exception of the correlation shown in Table 13, essentially the same method of preparing the tables has been used as was used by

*Read at the Forty-sixth Annual Meeting of the Association of American Medical Colleges, held in Toronto, Oct. 28-30, 1935.

1. Sincere appreciation is extended to Dr. F. A. Moss for his generous cooperation and assistance.

Dr. Moss in the yearly reports of the Committee on Aptitude Tests. Each table shows the number of students in each of five subgroups according to medical grade; i. e. the number of students whose average grade is below 75; the number whose average falls between 75 and 80; 80 and 85; and 90 and above. (According to this grouping, students whose average falls below 75 are those who actually fail and are dropped from school because of poor scholarship.) In addition to the subdivision of the student body into the five groupings on the basis of average medical grade, the tables also show the subdivision of each of these five groups into classes according to aptitude score.² This latter subdivision is precisely like the subdivision used by Dr. Moss in his yearly reports.

It will not be necessary to discuss the detailed findings shown in all of the tables. However, certain pertinent statements may be made on the basis of the results obtained in Table 1. It may be seen from this table that if students in the lowest 10 per cent of the group, on the basis of their aptitude scores, had not been admitted to school, slightly more than one-fourth of the failures would have been eliminated. At the same time, 15.7 per cent of the students whose average medical grades were between 75 and 79, 7.5 per cent with averages between 80 and 84, 2.8 per cent with averages between 85 and 89, and 1.3 per cent with averages above 90 also would have been eliminated. If students ranking in the lower one-fifth of their classes according to the aptitude test had not been admitted, more than 40 per cent of the failures would have been eliminated. At the same time, nearly 30 per cent of those having grades between 75 and 79, 29.6 per cent having grades between 80 and 84, 17.4 per cent having grades between 85 and 89 and 2.2 per cent having average grades above 90, would have been eliminated.

Except for certain practically insignificant differences, these findings are precisely those reported by Dr. Moss and by a number of other persons who have submitted analyses of the association between aptitude test and medical grade. From such findings certain interested groups have drawn the conclusion that there is a significant correlation between aptitude rating and medical school work. Certain other groups have used data of almost precisely the same character (Table 6) to draw the conclusion that there is not a sufficient degree of association between the two variables to permit a reasonable prediction of medical school work from the aptitude score.

The aim of any admitting officer or committee naturally must be to admit as many good students and as few poor students as possible. In

2. In all except table 13, the decile ratings are those derived from Dr. Moss' original aptitude rating, by assigning each student a new aptitude score which represents his relative standing among the students in his own class.

comparing one method of selection with another, then, a definite answer as to the relative merits of each can be obtained only by the crucial experiment of admitting an unselected group of students; and, after they have finished their work, of determining which method would have admitted the "better" group. Obviously, such an experiment is not practicable. In this connection, reference can be made to almost any one of Dr. Moss' reports. In these reports Dr. Moss calls attention to the fact that the aptitude test is not a perfect criterion for selecting students. He repeatedly emphasizes the fact that, if the aptitude test is used as a basis of selection, a group of students who are found to be acceptable would have been eliminated. Obviously, this must be true and in the same way it must be true that by any method of selection certain students will not be admitted who might have proved themselves acceptable students.

The definition of a "better" group of students is, of course, difficult. One person may argue, for example, that the best method of selection is the one which would have eliminated the fewest number of brilliant students. Another person may argue that the best method of selection is the one which would have eliminated the largest number of failures. Still another person may maintain that the best selection is one that gives the student body with the highest average grade.

Although it may seem trite to labor so obvious a point, the tone of a number of reports on the usefulness of the aptitude test would indicate that the real point of this matter is quite overlooked. A common sense practical view of the problem would seem to be one in which it admitted that the best criterion is the one which would eliminate the greatest number of failures and at the same time the fewest number of good students.

A decision as to the relative value of any test would seem to be a more or less arbitrary matter and to a considerable extent an individual matter. One school might choose to admit 100 students who subsequently fail, if in so doing, they admitted one brilliant student. However, it is probably safe to assume that most schools would not be willing to admit 100 failures in order not to eliminate one very good student. Where, then, is the line to be drawn?

Numerous analyses of the predictive value of the medical aptitude test have shown the relative predictive value of the test. Those who say that the test is not of use are simply stating their preferences or, in other words, are stating that the proportion of failures eliminated do not balance the proportion of good or acceptable students eliminated. In a very real sense there is and can be, probably, no right or correct answer to the problem. On the basis of the aptitude test, elimination of 10 per cent of

a class means roughly the elimination of 25 per cent of the failures, 15 per cent of the mediocre students, 7 per cent of the fair students and 3 per cent of the good students. Those persons who maintain that the aptitude test is not a useful criterion are saying only that these proportions are not selective enough.

In this connection it would seem pertinent to remind those who take this view that by their present methods of selection they admit 100 per cent of the failures and eliminate an unknown per cent of students who might have done acceptable work. Although the question can not be answered, it does not seem unfair to ask whether or not as many acceptable students and even excellent students are not being eliminated by any criterion now in use as would be eliminated by a more extensive use of the aptitude test.

Up to the present point in the discussion, the analyses of the value of the aptitude test has been based essentially on findings to be derived from tables showing the relationship between average medical school grades and the aptitude test. The method of making the association tables given in this report is essentially like the method used by Dr. Moss. In summary, it may be stated that, except for certain points in interpretation which will be discussed immediately below, the analysis of the relation between aptitude score and medical work for this report is completely in harmony with that of Dr. Moss.

It would appear from the analysis given above, as it does from Dr. Moss' reports, that the determination of the association between aptitude score and medical school grades consists of a simple, straightforward correlation of aptitude score and school average. The problem, however, is not as simple and straightforward as it seems. Those who have not appreciated fully the importance of footnote No. 2 may be thinking that the correlations given represent correlations based on the aptitude percentiles given out by Dr. Moss in the mimeographed volumes sent each year to the various medical schools. Actually, the correlations are not based on these percentiles but on percentile scores recalculated for each separate medical class. The method of making these recalculations is as follows: The original aptitude percentiles determined by Dr. Moss are arranged in order from the highest to the lowest for those admitted to an individual medical class. The highest 10 per cent of these scores, regardless of what the original aptitude may have been, are now reassigned new percentile scores so that all of them fall in the upper or highest decile. Similarly, the lowest 10 per cent of the class are reassigned to the lowest decile of the aptitude scale, again regardless of what the original aptitude ratings might have been. Expressed a little differently, this reassignment of aptitude

scores simply means that a student is given a new aptitude rating on the basis of his standing in his own class. For example, the highest man in a class may have an original aptitude percentile of 89, and the lowest man in the same class may have an original aptitude percentile of 48. After the reassignment of aptitude percentiles, the highest man is given a score of 99, the lowest man a score of 1.

The purpose of this adjustment of the aptitude score may not be readily obvious and its effects may not be appreciated fully. Justification for the procedure becomes clear, however, when one studies the original aptitude score of students in different medical schools. It is found, for example, that some medical schools admit only students who are rated very highly on the original aptitude score.³ In other schools, the students admitted are drawn almost entirely from among those who rank very low on the original aptitude test. Now, if there is a reasonable correlation between aptitude test and medical school average, failures in all schools tend to be more frequent among those with the lower aptitude scores. In the school which largely admits students only from the upper ranks on the aptitude test, failures will tend to be among those with the lower aptitude scores, but in this case those who fail are actually individuals whose original aptitude scores are relatively high, i. e., in the fifth decile. In the school which admits many students from the lowest ranks on the aptitude test, failures tend to be more frequent among those falling in the lowest ranks of the original aptitude score, i. e., in the tenth decile. In the latter school the best students tend to be among those with the higher aptitude rating, but in this case the best students on the aptitude scale may be those in the original fifth decile. This discussion leads immediately to the conclusion that the association between aptitude test and medical grade depends to a considerable extent not on the original aptitude score but on the relative aptitude score within a particular school. Thus, suppose an analysis is made of the medical school work of a group of students who have the same original aptitude score, but who go to different schools. Among this group of students, those who enter classes composed of much higher ranking students, on the basis of the aptitude test, will tend to do poor or mediocre work, while those who enter classes composed of lower ranking students will tend to be among those who do good work. The point of all of this, expressed more simply, perhaps, is this. Two students of equal ability, as measured by the aptitude test, may go to different schools; one may fail because of the high calibre of his classmates; the

3. Table 13 shows the distribution of students on the original aptitude scoring for one school, Harvard Medical School. In this school, 38.3 per cent of students admitted during 1931-1933 were from the upper or highest decile on the original score; no students were admitted from the lower two decile groups.

other may do very good work simply because of the low calibre of his classmates. The net result of this fact simply means that the original aptitude scores of the great majority of applicants will not indicate the kind of school work subsequently done unless account is taken of the particular ranking of an applicant among his own classmates. This fact was obvious to the Committee on Aptitude Tests, and to overcome the difficulty, and to show the correlation which actually does exist between aptitude test and medical grades for medical students in general, it was found necessary to regrade the aptitude scores for each class in every school.

It must be made perfectly clear that this procedure is not unjustifiable for the purposes of showing the relationship between aptitude scores and medical grades for the individual medical school. When, however, the data from a group of different classes and different medical schools are put together in a single table, as has been done for the tables shown in this report and as Dr. Moss has done in the majority of his reports, an extremely important point in interpretation arises. When several correlation tables of different sources are combined, the resulting table represents an average table and the results obtained from its analyses represent the average result. The significant point here, then, is the fact that association between aptitude test and medical grades represent the average association between these two variables. The conclusion may be drawn that the use of the aptitude test as a criterion for the selection of students will, on the average, tend to assist in the selection of a better group of students. Does it tend to do so for an individual medical school? Obviously, we cannot say until an analysis is made for the individual school in question. Because of this situation the analyses given in tables 7 to 12 are shown for a small group of individual medical schools. It is not necessary to go into detail as to conclusions which might be drawn from these tables. In a general way, similar conclusions are justified from these separate tables as from the more extensive data shown in table 1. Data from the University of Illinois and the University of Iowa would appear to show that the use of the aptitude test might be quite successful; data from Jefferson Medical College show that as high a percentage of students with averages above 90 would be eliminated as the percentage of failures, if 10 per cent of the class were eliminated.

Naturally, it would be desirable to draw a clear-cut conclusion as to the relative value of the aptitude test. Clearly, this is not altogether possible. However, it may be said that the use of the test as a supplement to the present methods of selection would tend to raise the general standard of medical students over the country. Most medical schools, however,

are not so much interested in raising the standard of medical students in general, as they are in raising the standards of their own school. Will the use of the aptitude test help an individual school? The only way in which a medical school can safely answer this question is through the analysis of the records of their own students. If, by the use of the test a certain small percentage of students can be eliminated which are composed of a high enough percentage of failures and mediocre students and a small enough percentage of good students, the test may be considered useful. If the application of the test means, practically, no improvement of the student body or only a very slight improvement, that school naturally and quite justifiably can and should refuse to use the test.

II

This section if the report deals with certain practical aspects of the actual use of the medical aptitude test in the selection of medical students. In this connection, it will be necessary to review, briefly, a number of the fundamental characteristics of the test. The following quotation from Moss⁴ illustrates one point:

"There are not comparable standards of grading premedical work; an 82 in one premedical college cannot be considered as representing the same as an 82 in another, either in ability of student or necessarily in scholastic qualifications. But if test scores, based upon the same tests given under the same conditions, at the same time in all the premedical colleges, be examined, the same students can be fairly well judged in ability on a comparable basis."

An obvious interpretation which could be made of this statement would appear to be that, by means of the aptitude score medical school admission officers are furnished with a single simple scale for the grading of the applications submitted to them. Reading further in the reports issued, it would appear that if an applicant's aptitude percentile rating falls into the lowest decile, there is a sizeable chance that the applicant would fail and only a very small chance that he would be a good student, if admitted to school. On the other hand, if the applicant's aptitude rating falls into the upper or highest decile, there is practically no chance that he would fail and a reasonable likelihood that he would be a good student.

Careful reading of Dr. Moss' reports reveals, as has been shown in the first section of this report, that the above interpretation is not correct and that the whole discussion of the relation of the aptitude test and medical grades is based, not on the original aptitude score but, on an adjusted score which rates the medical student or prospective medical student among the members of his own class or among persons applying for admission in a particular school. In other words, the original aptitude score of an

4. Report of the Committee on Aptitude Tests for Medical Students, *J. Assn. Amer. Med. Colleges*, January, 1931, p. 14.

individual applicant has only a very limited value to the admission officer until it is viewed in relation to the aptitude scores of other persons applying for admission. Certainly, in many individual cases the admission officer will not know whether an aptitude rating is high or low until he has reviewed the aptitude grades of all other applicants.

In connection with the above discussion, two practical situations can be visualized. If an admission officer has before him all of the applications which he must consider for a single class, he may classify an applicant's original aptitude score and determine whether or not it is high or low, not on the basis of its original value, but in relation to the other applications which he has before him. From the standpoint of the admission officer, this is a relatively simple matter and can be accomplished easily. The second situation to be visualized, and one which is probably the more frequent in actual practice, is one in which the admission officer has before him a single or, perhaps, only a few applications. How, now, is he to use the original aptitude score furnished by the committee? Clearly, if a particular applicant presents a very high score, he may be accepted, provided, of course, that the aptitude score is to be used as a criterion for selection. If the applicant presents a very low score, he may be rejected. However, it may be appreciated that these are relatively simple cases. Suppose, however, an applicant presents an aptitude percentile of 50. The original rating of 50 is to a considerable extent useless because the admission officer will not know whether the score is high or low as compared with the scores of applicants which he will receive subsequently. It must be clear in this connection that this is the application which the admission officer is likely to be most troubled by and is the application for which the original aptitude scoring gives the least help.

Various arguments and plans may be devised for eliminating the difficulty just reviewed. It may be pointed out, for example, that by any criterion for selection, an admission officer should have at hand all applications for admission to a single class before he can adequately select the best students. Obviously this is so, but the point must be clear that this is also true for the standard aptitude test in spite of the interpretation which seems to be rather generally accepted that this test had somehow overcome the difficulty.

One plan which might be suggested to assist the admission officer of an individual school in deciding on the relative position of an individual's aptitude score involves a careful study of the aptitude tests of students accepted at that school over a period of years. Such a study might reveal, for example, that students accepted who had presented original aptitude scores below a certain value, tended to be poor students. One school might

find, for example, that students whose original aptitude scores were below 40 were usually not satisfactory, another school might find that they could safely accept students with aptitude scores as low as 10.

Reviewing the whole question of the value of the aptitude test as a criterion for selecting students, the conclusion from this discussion appears to rest, as it did in the first section of this report, with the individual school. Reliable information as to the use a school can make of the test must depend, actually and in fact, on the results which that particular school has had, or could have had, in the past. The precision with which the aptitude test will predict subsequent medical school success in a particular school depends on how high a correlation exists between these two variables in that school. The actual use that a medical school can make of the aptitude test in selecting students depends on a whole group of factors existing in the school.

When it is fully appreciated that there are tremendous differences between medical schools and students who go to different schools, it must be apparent that what may be true in one school may not be true in another. Viewed in this light, does it not seem reasonable that a correlation which may be highly significant for one school may be quite imperceptible in another school; and, that as far as the medical aptitude test is concerned, there is no general answer as to its usefulness in all medical schools.

PSYCHOLOGY LABORATORY

74 Fenwood Road

BOSTON, MASS.

October 17, 1935.

Dr. Worth Hale,
Harvard Medical School,
Boston, Massachusetts.

Dear Dr. Hale:

In accordance with our conversation earlier this week, I am glad to transmit to you certain impressions regarding the functions of Professor Moss' Aptitude Test for Medical Students, with special reference to our situation here.

The test utilizes principles well known in the construction of "intelligence" and educational tests, its special feature being its medical content. It functions (1) as an "intelligence" or mental alertness test, and (2) somewhat to favor persons whose development has led them to take an interest in medical topics. There is a general tendency for tests of this kind to be longer than they really need to be, and if only a single, global score is sought, it is possible that this one could be efficiently shortened. But I should like to see the properties of the test as it is more thoroughly presented and exploited. Is it true that only the gross score of the test is used? There should be more emphasis on the subtests into which it is

divided, as is profitably done with Alpha. There should be standards of performance for these subtests, in terms of which each student's work should be evaluated. But this fuller understanding would naturally be in the light of all other information available about the student, and would be a function of the institution where he works, or proposes to work.

In this way I should prefer to know more about the possibility of this existing technique before urging modifications. The question does suggest itself however, if the heavy commitment to medical content is to the best advantage. This might give to a student whose main assets were a quickly registering memory, and a superficial interest in things medical, advantage over an abler man who brought to his graduate training a broader cultural foundation. In a test of the present length the experiment might be worth trying, of keeping the present degree of medical content in about half the subtests, and giving the remainder a broader cultural base.

I shall be interested to go over the 1935 Class data as soon as I have them from you, and of course to go into such greater detail on the above topics as may suit your convenience.

Very truly yours,

(sgd.) F. L. WELLS.

FLW:KRR

UNIVERSITY OF PENNSYLVANIA
PHILADELPHIA
COLLEGE

October 23, 1935.

Dr. Alan Chesney, Dean,
Johns Hopkins Medical School,
710 Washington Street,
Baltimore, Maryland.

My dear Dean Chesney:

Subsequent to several conferences with Dr. E. S. Thorpe I have been requested by him to write a brief note to your committee concerning the Medical Aptitude Test.

I have been interested in the study and use of the test since its inception and have been in close touch with Dr. Moss each year. I have found Dr. Moss receptive to any constructive criticism to the point that last year he asked me to write a brief statement, which was included with the test results, entitled "The Medical Aptitude Test in Educational Guidance." I feel that on the whole the test is very good, that it would be a needless task to begin from the ground up in reconstructing another test, and feel that the need is for continued study and improvement of the present test forms.

My specific experience with the test has been in the educational guidance of individual students and the recommendation of students to medical schools. Turning my experience toward the problem which confronts the medical schools—the problem of selection—I feel that a great deal of investigation and analysis upon the part of the admission officers is necessary. It is out of the question to hope to find a single test procedure which will settle the problem of admission to

medical school. Whatever benefit may accrue from the use of the Medical Aptitude Test must be found in conjunction with the student's grades, his recommendations, and such personality analysis as may be made by interview, correspondence or recommendation.

Before the admission officer can hope to use the percentile rating of an individual with other available facts bearing upon his admission it is necessary for him to have in mind the results of studies presented by Dr. Moss and the results which he has attained in studies in his own school in past years. I fear that a great deal of the criticism which has come down upon the aptitude test has been based on misinterpretations of the individual's raw score or percentile standing in the national group. From the very beginning I have found it necessary to make comparison between my own group of students in the College and those of other groups over the country. In doing so I find a great divergence from the average distribution of the total national standard. One group of schools will be found with an exceedingly superior distribution. Another group will have a distribution rather similar to the scatter of the nationwide distribution. Still another group of colleges will have distributions entirely inferior to this. In addition to this study I also attempt to make an analysis of the test given that year, observing the variations of the individual student and the various factors involved in the test and their relationship to his work in college and courses which he will take in medical school. Not until I have all of these facts somewhat clearly in mind can I properly interpret the results of former years and be of any aid in educational guidance of the individual now applying for medical school.

I have gone to some length in this discussion because I feel that the admission officers of the medical schools have a similar task before them in the use of medical aptitude tests. I feel that they must not only study their former groups as distinct groups, after the method used by Dr. Moss, but I feel it is necessary for them to have in mind the general picture of aptitude ratings of the individual applicant in terms both of his standing in the national group and of his standing within his own college group.

The analysis which I have suggested of the various items within the test and their relationship to the individual's accomplishments in specific courses within medical school training should in time greatly enhance the admission officer's use not only of the total percentile standing but the individual's various abilities as revealed by the parts of the test.

When one realizes that the medical schools annually select approximately 65% of the men who take the Medical Aptitude Test as entrants it is scarcely possible for us at the present time to indicate a certain point in percentile standing below which individuals should not be selected. Other selective factors may warrant the selection of a man well down in the medical aptitude rating and the refusal of a man who stands quite high. However, the above studies to my mind will go far to indicate the lower levels which might well be refused.

If I may be of any service at any time to your committee I shall be very happy to have you call upon me.

Sincerely,

(sgd.) R. A. BROTEMARKE,
College Personnel Officer.

RAB:JB

TEACHERS COLLEGE
COLUMBIA UNIVERSITY
NEW YORK

October 7, 1935.

Doctor Alan M. Chesney,
School of Medicine,
The Johns Hopkins University,
Baltimore, Maryland.

Dear Doctor Chesney:

I have reviewed the examinations for use in connection with admitting and classifying medical students. I think they are very good. I should not like to attempt to make them better, except possibly by making them longer by the addition of a more generalized test in the comprehension of what one reads. Superficially the tests look somewhat pedantic and over-specialized and over-weighted with memorizing; and they probably are better to predict success in the first two years of medical school than success later and throughout life. I imagine they are frankly designed to weed out the kind of persons who would be weeded out by the first two years of work in medical school. Their prediction of success later in life isn't perhaps as good as that of a more general test would be.

Very truly,

(sgd.) EDWARD L. THORNDIKE.

TABLE 1. SHOWING THE RELATION OF MEDICAL SCHOOL GRADE AND APTITUDE TEST.
5,197 CASES. COMBINATION OF TABLES 2, 3, 4 AND 5.

Deciles e	Average Medical Grade									
	Below 75		75--79		80--84		85--89		90 and above	
	No. Cases	%	No. Cases	%	No. Cases	%	No. Cases	%	No. Cases	%
1	8	0.7	18	3.3	180	6.8	283	16.4	71	31.5
2	28	2.5	45	8.3	246	9.4	250	14.5	39	17.3
3	37	3.4	40	7.4	260	9.9	250	14.5	25	11.1
4	53	4.8	31	5.7	306	11.6	218	12.6	21	9.3
5	82	7.5	57	10.5	289	11.0	185	10.7	30	13.3
6	109	10.0	55	10.2	307	11.7	164	9.5	7	3.1
7	135	12.4	67	12.4	275	10.5	134	7.8	20	8.8
8	162	14.8	66	12.2	295	11.2	113	6.6	7	3.1
9	194	17.8	75	13.9	260	9.9	83	4.8	2	0.9
10	280	25.7	85	15.7	198	7.5	49	2.8	3	1.3
Totals	1088	99.8	539	99.6	2616	99.5	1729	100.2	225	99.7

*Decile scores based on a regrading of the original aptitude score, each student being assigned a percentile score on the basis of his standing in his own class.

TABLE 2. SHOWING THE CORRELATION OF MEDICAL SCHOOL GRADE AND APTITUDE TEST. MEDICAL GRADES ARE FOUR YEAR AVERAGES: 3,013 CASES.

AVERAGE MEDICAL GRADE.

DECILES *	Below 75		75-79		80-84		84-89		90 and above	
	No.	%	No.	%	No.	%	No.	%	No.	%
	cases	%	cases	%	cases	%	cases	%	cases	%
1	2	0.3	2	2.2	74	5.7	158	16.2	26	26.0
2	16	2.6	9	10.1	120	9.3	130	13.3	14	14.0
3	19	3.3	5	5.6	115	8.9	140	14.3	9	9.0
4	25	4.3	4	4.4	148	11.5	128	12.9	7	7.0
5	52	9.1	6	6.7	133	10.3	106	10.8	19	19.0
6	53	9.2	13	14.6	147	11.4	95	9.7	2	2.0
7	70	12.2	10	11.2	133	10.3	84	8.6	18	18.0
8	66	15.4	10	11.2	152	11.8	59	6.0	3	3.0
9	95	16.6	17	19.1	136	10.6	51	5.2	1	1.0
10	151	26.4	13	14.6	122	9.5	24	2.4	1	1.0
Totals	571	95.6	89	95.7	1280	99.3	973	99.4	100	100.0

*Decile scores based on a regrading of the original aptitude score, each student being assigned a percentile score on the basis of his standing in his own class.

TABLE 3. SHOWING THE RELATIONSHIP OF MEDICAL SCHOOL GRADE AND APTITUDE TEST. MEDICAL GRADES ARE 1, 2 AND 3 YEAR AVERAGES: 2,020 CASES.

AVERAGE MEDICAL GRADE.

Deciles	Below 75		75-79		80-84		84-89		90 and above	
	No.	%	No.	%	No.	%	No.	%	No.	%
	cases	%	cases	%	cases	%	cases	%	cases	%
1	2	0.6	13	3.9	71	8.8	72	16.1	33	33.6
2	6	1.8	26	7.8	81	10.0	70	15.6	23	23.4
3	9	2.7	27	8.1	94	11.6	67	14.9	11	11.2
4	16	4.8	22	6.6	97	12.0	56	12.4	12	12.2
5	20	6.0	38	11.5	94	11.6	44	9.8	7	7.1
6	34	10.3	30	9.0	99	12.2	37	8.2	4	4.1
7	41	12.4	44	13.3	80	9.6	29	6.4	2	2.0
8	47	14.2	44	13.3	83	10.2	36	8.0	4	4.1
9	66	20.0	42	12.7	74	9.2	18	4.0		
10	89	26.9	44	13.3	42	5.2	18	4.0	2	2.0
TOTALS	330	99.77	330	99.5	805	100.4	447	99.4	93	99.7

*Decile scores based on a regrading of the original aptitude score, each student being assigned a percentile score on the basis of his standing in his own class.

TABLE 4. SHOWING THE RELATIONSHIP OF MEDICAL SCHOOL GRADE AND APTITUDE TEST. MEDICAL AVERAGES OF THE FIRST YEAR OF THE CLASS OF 1932.
(COMPUTATIONS FOR THIS TABLE WERE CHECKED BY DR. PALMER.)

AVERAGE MEDICAL GRADE.

Deciles	Below 75		75-79		80-84		85-89		90 and above	
	No. cases	%	No. cases	%	No. cases	%	No. cases	%	No. cases	%
1	0	0.0	2	2.6	12	9.1	15	19.7	3	30.0
2	3	4.2	7	9.2	14	10.6	11	14.4	2	20.0
3	3	4.2	4	5.2	16	12.2	12	15.7	1	10.0
4	6	8.4	4	5.2	18	13.7	9	11.8	0	0.0
5	4	5.6	5	6.5	19	14.5	8	10.5	3	30.0
6	9	12.6	9	11.8	14	10.6	6	7.8	1	10.0
7	9	12.6	9	11.8	15	11.4	5	6.5	0	0.0
8	13	18.3	10	13.1	8	6.1	5	6.5	0	0.0
9	13	18.3	10	13.1	10	7.6	3	3.9	0	0.0
10	11	15.4	16	21.0	5	3.8	2	2.6	0	0.0
Totals	71	99.6	76	99.5	131	99.6	76	99.4	10	100.0

*Decile scores based on a regrading of the original aptitude score, each student being assigned a percentile score on the basis of his standing in his own class.

TABLE 5. SHOWING THE RELATIONSHIP OF MEDICAL SCHOOL GRADES AND APTITUDE TEST. MEDICAL SCHOOL GRADES ARE 2, 3 AND 4 YEAR AVERAGES: 300 CASES.
(COMPUTATIONS FOR THIS TABLE CHECKED BY DR. PALMER.)

AVERAGE MEDICAL GRADE.

	Below 75		75-79		80-84		85-89		90 and above	
Deciles	No. cases	%	No. cases	%	No. cases	%	No. cases	%	No. cases	%
1	4	3.4	1	2.2	23	5.8	36	16.3	9	51.9
2	3	2.5	3	6.8	31	8.0	59	16.7	0	0.0
3	6	5.1	4	9.0	35	9.0	31	15.5	4	23.5
4	6	5.1	1	2.2	43	11.0	28	12.0	2	11.7
5	6	5.1	8	18.1	43	11.0	27	11.8	1	5.8
6	13	11.2	3	6.8	47	12.0	26	11.1	0	0.0
7	15	13.0	4	9.0	47	12.0	16	6.8	0	0.0
8	14	12.0	2	4.5	52	13.3	13	5.5	0	0.0
9	20	17.2	6	14.0	40	10.2	11	4.7	1	5.8
10	29	25.00	12	27.3	29	7.4	4	1.7	0	0.0
Totals	116	99.6	44	99.9	390	99.7	233	99.6	17	99.7

*Decile scores based on a regrading of the original aptitude score, each student being assigned a percentile score on the basis of his standing in his own class.

TABLE 6. SHOWING THE RELATIONSHIP OF MEDICAL SCHOOL GRADE AND APTITUDE TEST. DATA OBTAINED FROM A REPORT ON THE APTITUDE TEST FROM JEFFERSON MEDICAL COLLEGE.

AVERAGE MEDICAL GRADE.

QUANTILES	Failed		Conditioned		75-79		80-84		85 and above	
	No. cases	%	No. cases	%	No. cases	%	No. cases	%	No. cases	%
1	3	5.7	2	33.3	22	17.3	51	35.6	32	59.2
2	15	28.6	2	33.3	41	32.3	50	40.5	11	20.3
3	16	30.7	3	33.3	42	33.0	20	19.5	11	20.3
4	18	34.6	0	0.0	22	17.3	6	4.1	0	0.0
Totals	52	99.6	6	99.9	127	99.8	143	99.7	54	99.8

TABLE 7. SHOWING THE RELATIONSHIP OF MEDICAL SCHOOL GRADE AND APTITUDE TEST. MEDICAL GRADES BASED ON FOUR YEAR AVERAGES, 253 CASES, GRADUATING CLASSES OF 1933 AND 1935, JEFFERSON MEDICAL COLLEGE.

AVERAGE MEDICAL GRADE.

Deciles	Below 75		75-79		80-84		85-90		90 and above	
	No. cases	%	No. cases	%	No. cases	%	No. cases	%	No. cases	%
1	0	0.0	1	6.3	7	6.2	18	20.5	2	28.6
2	0	0.0	2	12.5	10	8.9	12	16.4	1	14.3
3	3	7.5	0	0.0	11	9.8	13	16.7	2	28.6
4	3	7.5	0	0.0	11	9.8	6	7.7	0	0.0
5	1	2.5	3	18.8	13	11.6	7	8.9	0	0.0
6	3	7.5	1	6.3	14	12.5	9	11.5	0	0.0
7	7	17.5	1	6.3	15	13.4	7	8.9	0	0.0
8	5	12.5	2	12.5	14	12.5	3	3.8	0	0.0
9	9	22.5	2	12.5	9	8.0	4	5.1	0	0.0
10	9	22.5	4	25.0	8	7.1	1	1.3	2	28.6
Totals	40	100.0	16	100.2	112	99.8	78	99.8	7	100.1

*Decile scores based on a regrading of the original aptitude score, each student being assigned a percentile score on the basis of his standing in his own class.

TABLE 8. SHOWING THE RELATIONSHIP OF MEDICAL SCHOOL GRADE AND APTITUDE TEST. MEDICAL GRADES OF GRADUATING CLASSES OF 1933, 1935 AND 1936. UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE. 186 CASES.

AVERAGE MEDICAL GRADE.

Deciles *	Below 75		75-79		80-84		85-89		90 and above	
	No. cases	%	No. cases	%	No. cases	%	No. cases	%	No. cases	%
1	1	4.8	0	0.0	4	4.5	12	24.5	0	0.0
2	0	0.0	1	25.0	8	8.1	8	16.3	0	0.0
3	0	0.0	1	25.0	8	8.1	7	14.3	1	100.0
4	0	0.0	0	0.0	13	12.6	6	12.2	0	0.0
5	1	4.8	1	25.0	10	9.9	8	16.3	0	0.0
6	2	9.5	0	0.0	15	14.4	5	10.2	0	0.0
7	2	9.5	0	0.0	16	15.3	2	4.1	0	0.0
8	5	23.8	0	0.0	13	12.6	1	2.0	0	0.0
9	3	14.3	0	0.0	15	14.4	0	0.0	0	0.0
10.	7	33.3	1	25.0	9	9.0	0	0.0	0	0.0
Totals	21	100.0	4	100.0	111	99.9	40	99.9	1	100.0

*Decile scores based on a regrading of the original aptitude score, each student being assigned a percentile score on the basis of his standing in his own class.

TABLE 9. SHOWING THE RELATIONSHIP OF MEDICAL SCHOOL GRADE AND APTITUDE TEST. MEDICAL GRADES OF GRADUATING CLASSES OF 1933, 1935 AND 1936. THE JOHNS HOPKINS UNIVERSITY SCHOOL OF MEDICINE. (138 CASES).

AVERAGE MEDICAL GRADE.

DECILE *	Below 75		75-80		80-84		85-89		90 and over	
	No. cases	%	No. cases	%	No. cases	%	No. cases	%	No. cases	%
1	0	0.0	0	0.0	4	6.8	5	10.4	4	66.6
2	0	0.0	0	0.0	6	10.2	7	14.6	0	0.0
3	0	0.0	2	16.7	6	10.2	6	12.5	0	0.0
4	1	7.7	1	8.3	4	6.8	8	16.6	1	16.7
5	0	0.0	0	0.0	8	13.5	6	12.5	0	0.0
6	2	15.4	2	16.7	4	6.8	7	14.6	0	0.0
7	1	7.7	1	8.3	9	15.2	3	6.2	0	0.0
8	2	15.4	2	16.7	6	10.2	4	8.3	0	0.0
9	4	30.8	2	16.7	5	8.5	1	2.1	1	16.7
10	3	23.7	3	16.7	7	11.9	1	2.1	0	0.0
TOTALS	13	100.7	12	100.1	59	100.1	48	99.9	6	100.0

*Decile scores based on a regrading of the original aptitude score, each student being assigned a percentile score on the basis of his standing in his own class.

TABLE 10. SHOWING THE RELATIONSHIP OF MEDICAL SCHOOL GRADE AND APTITUDE TEST. MEDICAL GRADES ARE FOUR YEAR AVERAGES, UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE. (199 CASES)

DECILE *	Average Medical Grade									
	Below 75		75-9		80-84		85-89		90 and over	
	No.	%	No.	%	No.	%	No.	%	No.	%
1	0	10.0	5	0.0	2	8.2	9	17.3	3	33.3
2	2	10.0	7	3.5	2	11.5	11	21.2	2	22.2
3	3	5.0	6	5.3	1	9.8	9	17.3	1	11.1
4	3	5.0	6	5.3	1	9.8	7	13.5	2	22.2
5	7	10.0	12	12.3	2	19.7	4	7.7	0	0.0
6	8	5.0	9	14.0	1	14.8	2	3.8	0	0.0
7	5	10.0	4	8.8	2	6.6	5	9.6	0	0.0
8	5	15.0	4	8.8	3	6.6	2	3.8	1	11.1
9	12	15.0	7	21.1	3	11.5	1	1.9	0	0.0
10	12	15.0	1	21.1	3	1.6	2	3.8	0	0.0
TOTALS	57	100.0	61	100.2	20	100.1	32	95.9	9	99.0

*Decile scores based on a regrading of the original aptitude score, each student being assigned a percentile score on the basis of his standing in his own class.

TABLE 11. SHOWING THE RELATIONSHIP OF MEDICAL SCHOOL GRADE AND APTITUDE TEST. MEDICAL GRADES ARE FOUR YEAR AVERAGES OF GRADUATING CLASS OF 1933. CREIGHTON MEDICAL COLLEGE. (61 CASES)

DECILE *	Average Medical Grade									
	Below 75		75-9		80-84		85-89		90 and over	
	No.	%	No.	%	No.	%	No.	%	No.	%
1	0	0.0	0	0.0	1	4.0	3	9.4	1	100.0
2	1	10.0	0	0.0	3	12.0	1	3.1	0	0.0
3	1	10.0	0	0.0	1	4.0	4	12.5	0	0.0
4	1	10.0	0	0.0	3	12.0	5	15.6	0	0.0
5	1	10.0	0	0.0	1	4.0	5	15.6	0	0.0
6	0	0.0	0	0.0	3	12.0	5	15.6	0	0.0
7	0	0.0	0	0.0	3	12.0	4	12.5	0	0.0
8	2	20.0	0	0.0	2	8.0	3	9.4	0	0.0
9	2	20.0	0	0.0	2	8.0	2	6.3	0	0.0
10	2	20.0	0	0.0	3	12.0	0	0.0	0	0.0
TOTALS	10	100.0	0	0.0	25	100.0	32	100.0	1	100.0

*Decile scores based on a regrading of the original aptitude score, each student being assigned a percentile score on the basis of his standing in his own class.

TABLE 12. SHOWING THE RELATIONSHIP OF MEDICAL SCHOOL GRADES AND APTITUDE TEST. MEDICAL GRADES ARE TWO YEARS FOR THE CLASS OF 1933 AND FOUR YEAR AVERAGES FOR THE CLASS OF 1935, UNIVERSITY OF IOWA SCHOOL OF MEDICINE (123 CASES)

AVERAGE MEDICAL GRADE.

	Below 75		75-80		80-84		85-89		90 and over	
DECILES *	No.		No.		No.		No.		No.	
	cases	%	cases	%	cases	%	cases	%	cases	%
1	0	0.0	0	0.0	9	14.6	3	23.1	2	100.0
2	1	5.1	2	10.0	8	13.1	0	0.0	0	0.0
3	1	5.1	0	0.0	8	13.1	4	30.8	0	0.0
4	2	6.5	2	10.0	7	11.5	1	7.7	0	0.0
5	3	9.4	5	25.0	6	9.8	2	15.4	0	0.0
6	3	9.4	1	5.0	7	11.5	1	7.7	0	0.0
7	5	15.6	2	10.0	6	9.8	0	0.0	0	0.0
8	7	21.9	3	15.0	3	4.9	1	7.7	0	0.0
9	3	9.4	3	15.0	3	4.9	1	7.7	0	0.0
10	7	21.9	2	10.0	4	6.6	0	0.0	0	0.0
TOTALS	32	100.1	20	100.0	61	100.0	13	100.1	2	100.0

*Decile scores based on a regrading of the original aptitude score, each student being assigned a percentile score on the basis of his standing in his own class.

TABLE 13. SHOWING THE RELATIONSHIP OF CLASS STANDING AND APTITUDE TEST. DATA TAKEN FROM A REPORT ON THE APTITUDE TEST, HARVARD MEDICAL SCHOOL. (303 CASES)

AVERAGE MEDICAL GRADE

Decile *	5th Fifth		4th Fifth		3rd Fifth		2nd Fifth		1st Fifth		Totals	
	No. cases	%	No. cases	%	No. cases	%	No. cases	%	No. cases	%	No. Cases	%
1	13	23.2	19	29.7	19	32.6	26	41.3	39	65.8	116	38.5
2	13	23.2	15	23.4	19	32.6	17	26.0	7	11.3	71	23.4
3	10	17.8	14	21.7	7	12.1	9	14.3	9	14.5	49	16.2
4	8	14.3	7	10.9	7	12.1	7	11.1	2	3.2	31	10.2
5	8	14.3	5	7.8	2	3.4	2	3.2	3	4.6	20	6.6
6	2	3.6	2	3.1	3	5.2	1	1.6	2	3.2	10	3.3
7	2	3.6	0	0.0	1	1.7	1	1.6	0	0.0	4	1.3
8	0	0.0	2	3.1	0	0.0	0	0.0	0	0.0	2	0.6
9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
10	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Totals	56	100.0	64	99.7	58	100.1	63	99.9	62	99.8	303	99.9

* Moss' original rating.

This table was prepared primarily as an example to show that certain schools admit a majority of students from a very limited range as determined by the original aptitude scores.

Study of Accomplishment of the 1934 Freshman Class in Seventy-eight Medical Colleges

SEVENTH STUDY

FRED C. ZAPFFE

Secretary, Association of American Medical Colleges
Chicago, Illinois

Since 1928, a study has been made of the accomplishment of the freshman students in seventy-eight medical schools for the purpose of determining how many of these students dropped out by the end of the year on account of poor scholarship, illness, lack of finances or some other reason; how many were charged with conditions, failures or both; how many failed to complete the work and how many had a clear record. This information is forwarded to the arts colleges whence these students came (usually about 600 colleges) with the request to report on the scholastic standing of these students in the college. This information is correlated with like information received from the medical schools and the resulting study has been published in this JOURNAL.

A number of extremely interesting findings have been made. For instance, never have as many students matriculated in the medical schools as were accepted for matriculation. About 10 per cent do not enter. Nor have as many students completed the year as were enrolled at its beginning. About 2 per cent, as a rule, drop out early in the course; in fact, a few remain only a day or two; the remainder leave within the first week or ten days. During the years this study has been made, it was found that from 14 to 15 per cent—even more—are "out" (for poor scholarship and other reasons as stated above) at the end of the year. By far the largest majority of these students failed or were dropped because of poor scholarship! Only once in the course of these seven years has a medical school reported that all of its freshmen students (125) passed with a clear record. This school must have exercised extraordinary acumen in the selection of its students.

Each year about 600 arts colleges furnish the freshman class in medical schools. They are not always the same 600 colleges. About 500 colleges furnish students year after year; the remaining 100 are "occasionals." About 400 of the colleges send from three to 90 students into medical schools each year; many colleges send only one student; a few send two students. Among the latter two groups occur the "occasionals."

In 1934, 585 colleges were represented in medical schools. Of this number, 456, or 77.9 per cent were approved by some regional accrediting agency; 129, or 22.1 per cent, were not approved by such an agency although, in most instances, their students are accepted by the state university of the state in which the college is situated which makes its students acceptable by medical schools. The record for these colleges in previous years was: 111 in 1931 (18.8 per cent); 129 in 1932 (21.7 per cent); 137 in 1933 (23.6 per cent). However, the number of students coming from this group of colleges has lessened year by year (only 298 in 1934). Of the total number of students embraced in this study (6,683), 95.5 per cent came from approved colleges; 4.5 per cent came from non-approved (but approved by state university) colleges. Perhaps, this may be regarded as being a tightening up in the selection of students, which is also apparent in the increase in the first year failures of promotion.

Despite the clamor asking for reduction in the number of medical students, the 1934 freshman class exceeded in numbers any previous class, not excluding the classes attending the 166 medical schools in existence thirty years ago. True, the increase over 1933 was small, only 33 students, but it was larger by 10 per cent than the class of 1931 (6,097). Only 40 students (the smallest number) dropped out within the first week of the course and were not accounted for in the final figures reported at the end of the year. In 1934, 7,419 applicants were accepted by the medical school included in this study, but only 6,724 enrolled and of these 6,683 were reported on at the end of the year. Therefore, about 700 of those accepted did not enroll and 40 enrolled but soon decided to drop out. In 1933, the difference between accepted and enrolling students was about 900, but in that year 125 more applicants were accepted than in 1934.

TABLE 1. ACCOMPLISHMENT OF ALL FRESHMAN STUDENTS.

Number reported	6,683
Clear record	70.7%
Encumbered record	13.9%
Failed	11.5%
Withdrew	3.8%
Out at end of year.....	15.3%

Of the 6,683 freshman students reported on at the end of the 1934-1935 academic year, 70.7 per cent made a clear record, exactly the same percentage as for the 1933-1934 class. There was a difference of 1 per cent in those reported as having an encumbered record (conditions; fail-

ures; both; incompleting work), 13.9 per cent in 1934; 14.9 per cent in 1933. But, this 1 per cent is absorbed by the "outs," 15.3 per cent in 1934; 14.3 per cent in 1933. Was this difference also due to a tightening up by the medical schools? The number of those withdrawing for reasons other than poor scholarship was the same for both years, 3.8 per cent; therefore, the increase was in the group of those who failed, were dropped, or withdrew on account of poor or failing scholarship. The total number of medical students has not been lessened by very much over previous years!

TABLE 2. ACCOMPLISHMENT OF OWN AND OTHER STUDENTS.

	Own	Others
Total	2,568—38.4%	4,115—61.6%
Clear	73.7%	68.7%
Encumbered record	12.8%	14.5%
Failed	10.6%	12.1%
Withdrew	2.9%	4.7%
Out at end of year.....	13.5%	16.8%

TABLE 3. RELATION OF PREMEDICAL PREPARATION TO ACCOMPLISHMENT IN MEDICAL SCHOOL—ALL STUDENTS.

Preparation	Clear			Encumbered			Out-Scholarship					Total	Not Rtd*	Grand Total
	U	M	L	U	M	L	Rpt*	F*	Dr*	Wd*	Wd. or*			
2 yrs.	24	28	5		2	15	2	2	5	4	3	84		84
2-3 yrs.	313	395	134	2	36	146	16	57	85	35	62	1281	11	1292
3-4 yrs.	470	539	229	2	33	219	16	54	86	27	61	1736	54	1790
4 or more yrs. No degree	62	86	42		9	36	15	15	22	3	14	306	5	311
A.B.	495	458	226	5	28	185	13	28	105	27	74	1684	114	1698
B.S.	345	374	178	8	30	158	7	22	96	17	51	1286	58	1344
Other degrees	8	13	6		12		1		5	1	2	50	14	64
Totals	1717	1867	862	17	138	775	70	178	404	114	267	6427	256	6683
	---4466---			---928---			---766---							

* Rpt.=Must repeat. F=Failed. Dr.=Dropped. Wd.=Withdrew.

Wd. o. r.=Withdrew other reasons. Not Rtd.=Not rated.

The accomplishment of "own" students (from parent university or college) and of "other" students (from other universities or colleges) was comparable to that of previous years. As is to be expected, the medical school selected only the best of its own college students, which is easily made possible by the opportunity afforded to consult with the college

authorities as to the desirability of accepting or not accepting certain students. Students of other universities or colleges must be accepted on the basis of credits, tests, letters from teachers,—which always means taking a chance. That this is true is shown by the accomplishment of the two groups. The "own" students made more clear records and had fewer encumbered records and failures of promotion than did the "other" stu-

TABLE 4. RELATION OF PREMEDICAL PREPARATION TO ACCOMPLISHMENT IN
MEDICAL SCHOOL—OWN STUDENTS.

Preparation	Clear			To- tal	Encumbered			To- tal	Out-Scholarship				To- tal	Wd. or*	Grand Total
	U	M	L		U	M	L		R*	F*	Dr*	Wd*			
2 yrs.	9	13	4	26			5	5	1	2	1	1	5	2	38
2-3 yrs.	142	220	70	432	17	65	82	82	10	31	38	13	92	15	621
3-4 yrs.	285	293	142	720	10	143	153	153	5	32	41	13	91	22	986
4 or more yrs. No degree	27	38	23	88	2	15	27	27	10	8	8	1	27	7	139
A.B.	129	151	76	356	3	10	34	47	2	7	24	4	37	17	457
B.S.	73	79	37	189	1	3	20	24	1		13	4	18	10	241
Other degrees	1	2	2	5			3	3			1		1		9
Totals	666	796	354	1816	4	42	285	331	29	80	126	36	271	73	2491

* R.=Must repeat. F.=Failed. Dr.=Dropped. Wd.=Withdraw.
Wd. o. r.=Withdraw other reasons.

TABLE 5. RELATION OF PREMEDICAL PREPARATION TO ACCOMPLISHMENT IN
MEDICAL SCHOOL—OTHER STUDENTS.

Preparation	Clear			To- tal	Encumbered			To- tal	Out-Scholarship				To- tal	Wd. or*	Grand Total
	U	M	L		U	M	L		R*	F*	Dr*	Wd*			
2 yrs.	15	9	1	25	2	10	12	12	1		4	3	8	1	46
2-3 yrs.	171	175	64	410	2	19	81	102	6	26	47	22	93	47	660
3-4 yrs.	185	246	87	518	2	23	76	101	11	22	45	14	82	39	750
4 or more yrs. No degree	35	48	19	102		7	23	30	5	7	14	2	28	7	167
A.B.	366	307	190	863	2	18	151	171	11	21	81	23	136	57	1227
B.S.	272	295	141	708	7	27	136	172	6	22	63	13	124	41	1045
Other degrees	7	11	6	24			9	9	1		4	1	6	2	41
Totals	1051	1091	508	2650	13	96	486	597	41	98	278	78	495	194	3936

* R.=Must repeat. F.=Failed. Dr.=Dropped. Wd.=Withdraw.
Wd. o. r.=Withdraw other reasons.

dents. Only 13.5 per cent of "own" students were "out" at the end of the year, whereas, 16.8 per cent of "other" students were "out."

TABLE 6. RELATION OF PREMEDICAL PREPARATION TO ACCOMPLISHMENT.
(All Students)

Length of Preparation	Total	Clear	Encumbered	Failed	Withdrew
2 years	84—1.3%	60.7%	20.2%	15.5%	3.6%
2-3 years	1,292—19.3	66.4	14.4	14.4	4.8
3-4 years	1,790—26.8	71.6	14.2	9.7	3.5
4 years plus (no degree).....	311—4.7	60.5	17.7	17.6	4.2
A. B.	1,798—26.9	74.2	12.2	9.5	4.1
B. S.	1,344—20.1	71.1	14.6	10.5	3.8
Other degrees	64—0.9	67.2	18.6	11.2	3.0
No degree	3,477—52.1%				
Degrees	3,206—47.9%				

Tables 3, 4, 5 and 6 show the accomplishment in medical school as correlated with the premedical preparation. Clear and encumbered records are shown by thirds of the class, U, M, L. As all previous studies have shown, the A. B. students make the best records. They have the greatest number of clear records and the smallest number of encumbered records with the fewest "out." Next in order, and close seconds, are the students with from three to four years of preparation. The B. S. students stand third, except for encumbered records where the two to three year men made a better showing. From then on, there is considerable variability. For clear records, the "other degrees" group (in which the Ph. Ds. fall) is fourth; the two to three year men, fifth; the two year (60 hours) men, sixth and the four year and plus group (no degree), seventh. In the encumbered record group, the standing is as follows: B. S., fourth; four years, fifth; "other degrees," sixth, and two years, seventh. In the "out" group, the four year men have the most "outs"; then, with fewer "outs," come the two year men; next, the two to three year men and then the "other degrees" group.

There was a slight increase in the number of students who had degrees. In 1933, 46.5 per cent had degrees; in 1934, 47.9 per cent. No degrees: 53.5 per cent in 1933; 52.1 in 1934. In 1934, only 1.3 per cent of the 6,683 students reported on had 60 hours of preparation; 19.3 per cent had from two to three years (65-89 hours) of preparation (20.4 per cent in 1933); 26.8 per cent had from three to four years of preparation (excess over 90 hours being earned in summer sessions) (28.9 per cent in 1933). The four or more years group (no degree) was about the same

in both years: 4 per cent in 1933; 4.7 per cent in 1934. Students receiving a degree on successful completion of the first year in medicine are not included in these figures.

TABLE 7. ACCOMPLISHMENT OF WOMEN STUDENTS.

	Clear	Encumbered	Failed	Withdrew	Out end of year
Total number.....327	65.7%	19.0%	9.4%	5.9%	15.3%
(15 of the women were repeaters.)					

The accomplishment of the women students is shown in Table 7. They show fewer clear records than do the men students, more encumbered records; fewer failures; more withdrawals, but the same percentage of "outs," 15.3 per cent as the men. The number of women medical students is increasing. Why?

TABLE 8. RELATION OF PREMEDICAL PREPARATION TO ACCOMPLISHMENT OF WOMEN STUDENTS.

Length of Preparation	Total	Clear	Encumbered	Failed	Withdrew	Out end of year
2-3 years	46—14.1%	60.9%	15.2%	8.7%	15.2%	23.9%
3-4 years	66—20.2	68.2	15.2	13.5	3.0	16.5
4 years plus (no degree) ..	25— 7.6	68.0	16.0	16.0		16.0
A. B.	138—42.2	67.4	18.1	7.9	6.5	14.4
B. S.	52—15.9	61.5	30.8	5.8	1.9	7.7

In contrast to the men students, the women with a B. S. had the fewest "outs." The A. B. students came second; the four or more years group, third; the three to four years group, fourth, and the two to three years group, fifth. The three to four years group, however, showed the greatest number of clear records; the four or more years group was second; the

TABLE 9. ACCOMPLISHMENT OF REPEATERS.

	Clear	Encumbered	Failed	Withdrew
Total number.....309—4.6%	63.2%	16.0%	17.5%	3.3%
—————20.8%—————				

A. B. group, third; the B. S. group, fourth, and the two to three years group, fifth. From the data at hand, it is not possible to explain the variations in this group from the men group.

The "repeating" group is larger this year than it was in previous years,

but the accomplishment of the repeaters is about the same. Slightly less than two-thirds made good; slightly more than one-fifth were "out" at the end of the year. Perhaps, these results may be taken to justify permitting a student who has failed to repeat the course, provided that the reasons for his failure to pass are acceptable as mitigating circumstances. On the whole, it is quite apparent from a study of the reports made by the medical schools that many "dropped" students go elsewhere to repeat. Do mitigating circumstances come into consideration in such cases? In a number of such instances it was found that the repeater had gained acceptance by not reporting his failure in another medical school.

TABLE 10. CORRELATION OF APTITUDE TEST RATING WITH ACCOMPLISHMENT
IN MEDICAL SCHOOL. No. STUDENTS: 4,792—71.7%.

A.T. Rating	Clear			Encumbered			Rpt	Fd	Dr.	Wdr S	Wdr FIOR
	U	M	L	U	M	L					
0-33 27.2	26.3	46.4	27.3	18.1	81.9		10.4	28.3	46.3	1.5	5.2
		--59.6--		--16.2--				--16.7--			
34-66 35.4	34.9	42.7	22.4	2.3	14.3	83.4	7.1	19.5	62.0	11.4	3.6
		--71.4		--13.5--				--11.5--			
67-99 37.4	47.2	36.6	16.2	2.7	13.8	83.5	10.0	20.0	52.9	17.1	2.7
		--84.3--		--8.7--				--4.3--			

* Rpt.=Must repeat. Fd.=Failed. Dr.=Dropped; Wdr. S.=Withdrew account failing scholarship. Wdr. FIOR=Withdrew, lack of finances, illness, other reasons than scholarship.

About 72.5 per cent of these freshmen had taken the aptitude test, either in 1932 or in 1933. The accomplishment of these students in medical schools was correlated with the percentile rating given them by the Committee on Aptitude Test in the report sent out to the various medical schools. As in tables 3, 4 and 5, the report as to standing in class by thirds was carried out in table 10, and for purposes of correlation, the aptitude test was considered in three groups. It is seen that as the rating in the test became better, accomplishment in medical school became better. The 0-33 test group had the least number of clear records; the largest number of encumbered records and of "outs." The 67-99 test group, had a greater number of clear records, 50 per cent more than the 0-33 test group; about one-half as many encumbered records, and about one-fourth as many failures or "outs." Nearly 85 per cent of the 67-99 test group had clear records and only 4.3 per cent failed. However, 17.1 per cent of this group withdrew because of failing or poor scholarship as against only 1.5 per

cent of the 0-33 test group and 11.4 per cent of the 34-66 test group. The three groups were fairly well divided among all of the students represented in this study; slightly more than one-fourth were in the 0-33 group; slightly more than one-third were in the 34-66 group; nearly 40 per cent were in the 67-99 group. On the whole, the test rating appears to duplicate itself fairly well in the accomplishment in medical school. The test rating was not correlated with premedical preparation. Doubtless, the results would be interesting.

SOPHOMORES AND JUNIORS

Of the 6,457 freshmen reported on in 1932, 5,586, or 86.5 per cent, were reported on as sophomores in 1933, and 5,511, or 85.3 per cent of the 1932 freshman class, were reported on as juniors this year. Of these juniors, 2.7 per cent had failed at the end of the year, leaving 83 per cent of the original freshman class to enter on the senior year in 1935.

Neither Yale nor Johns Hopkins make any report at the end of the third year; therefore, their students are counted as being "clear." If any considerable number of these students fail to graduate in 1936, the percentage of failures in the junior class given above will necessarily be greater. The final results for the 1932 entering or freshman class cannot be stated until after the close of the 1935-1936 academic year.

Of the 6,650 freshmen reported on in 1933, 5,887, or 88.5 per cent, were reported on as sophomores in 1934. Of this number, 5.8 per cent failed of promotion, leaving 82.7 per cent of the original freshman class to enter on the work of the junior year in 1935.

More than 5 per cent of the 1934 sophomores were reported as having failed; 14.1 per cent of this class had failed in the freshman year. Discrepancies in figures, apparent or otherwise, are easily explained by the fact that a not inconsiderable number of students began the study of medicine before 1932; dropped out for a year or two, or even more (one student began in 1928), and then entered as a sophomore or as a junior. These facts were brought out by the preparation of the student register when information as to previous accomplishment had to be secured from old records which now go back to 1928.

These studies have been of value to medical schools in the selection of medical students. If certain arts colleges show, year after year, that their students in medical school do not carry on well, they will find it difficult, if not impossible, to have their students accepted by medical schools. Lists showing these data are sent to every member college each year.

The extent and degree of premedical preparation is shown to have a

bearing on future accomplishment in the medical school. The best preparation, doubtless, is four years of college work leading to the A.B. degree. Therefore, in justice to himself, every student who plans to study medicine should not be content with less than that amount of preparation. Less may be sufficient but it is not the best. The exceptionally brilliant student, who comes with only 60 hours or less than three years, may make a fine record in medical school, but—he is the exception. Too much science is a handicap. It is not indicative of a proper mental attitude for the study of medicine. Therefore, arts colleges will do well to advise and urge their students to remain for four years; to take cultural courses, in excess of science courses; to aim for the A.B. degree rather than the B.S. degree. All of these statements are justified by the results of this study.

The Two Year Medical School and University Education*

WM. DEB. MACNIDER

Kenan Research Professor of Pharmacology, University of North Carolina
Chapel Hills, North Carolina

Likely one of the most difficult experiences of the human intellect is to be able, as Bacon suggested, to see things in their relationship, one to the other; which is the main point. We have become so accustomed to exercise the analytical method in our consideration of people, institutions and circumstances, that it has become increasingly unusual for us to attempt an understanding of a related whole. It is only when such relations can be evaluated in a composite fashion that the real value of a movement or organization can be understood and given the significance which it deserves.

The type of medical school with which this brief statement is concerned, which offers only the first two years of the medical curriculum, has suffered and has been misunderstood because it has been thought of in an isolated, detached fashion, and has not been seen, with certain exceptions, as an integral part of scientific thought at certain higher levels of understanding. The related wholeness of such schools has not, in general, been appreciated. This type of school, I fear, has been thought of rather exclusively as an abortive attempt on the part of certain universities and colleges to do something medically of an undetermined order, or, perhaps, even with less thoughtfulness of their responsibility, to become helpful without reason and offer a cheap type of medical instruction to a poor type of student. This has not been the case. No thoughtful person could possibly be interested in this form of medical training.

The two year medical school, properly conceived and executed, has a position of dignity in its own right and in addition is essential to the intellectual life of a university, especially at the graduate level of instruction. This relationship of such schools to understanding, as a whole, has been in operation for centuries at the Universities of Oxford and Cambridge. At certain institutions of higher learning in America that do not offer training for medical students, certain departments of the medical curriculum have been found essential for graduate instruction.

A two year medical school may be considered under certain rather

*An amplification of a statement made before the Executive Committee of the Association of American Medical Colleges; Toronto, Canada, October 27, 1935.

definite headings through which it expresses itself and finds itself educationally.

I. Acting specifically in its educational capacity, the primary function of the two year medical school is to train adequately properly prepared students in those branches of the medical curriculum which naturally find themselves in this early period of the curriculum.

The transition from premedical to medical subjects is not abrupt but has a certain naturalness in its extension. Such a school has the opportunity to influence the student in his choice of subjects during the academic period of his instruction. To see to it that he not only has the requirements, in general, for admission to medicine, but that these requirements are of the proper order and balance. This influence is worth while if it operates not only for majors and minors in science, but if it enables the student to acquire modern languages as tools for science and keys which may be used to unlock pleasantries for life, and if, above all, it can induce the student during his academic experience to gather breadth of understanding which will make his particulate scientific accomplishments more bearable and of greater related importance.

With such an influence, or at least serving as a source for such information, the student when he comes into the medical school should be of a select type who can use both his hands and his mind in a more understanding manner. A two year medical school not primarily interested in numbers can in this manner very largely pick men and women from the college who not only have adequate prerequisites for medicine but individuals who are known personally in terms of their character. This is important, for it is only through such a process of character picking that we can look forward to having individuals as physicians who have the ideals, perhaps the consecration, to practice this profession and investigate the intricacies of life processes through research.

This paper is not concerned with the residua of the curriculum in the two year medical school. Both fortunately and unfortunately these have been standardized and as is ever the case when such a process is employed which deals with the mind, it has restrained freedom but has also regulated endeavor.

The retrogression of certain so-called clinical subjects into the terminal portion of the second year of the two-year medical school is both natural and just, and to this change these schools must adjust themselves in an honest, balanced, scientific fashion. This swing back of the clinical pendulum is what might have been anticipated. There was a time when all of the medical curriculum, other than anatomy, materia medica and what might be called physiology was clinical. With the development of the

experimental method in medicine, long forgotten in Aristotle and Harvey, but resurrected through Claude Bernard, the so-called laboratory courses expanded, likely unduly, and displaced the clinical subjects forward, leading to the development of a four-year medical curriculum. We now realize, in the first place, that the laboratory subjects, for want of a better term, may have gone too far, and secondly, which is of more importance, that these laboratory or preclinical subjects have welded themselves into the clinical and have, in turn, made scientific medicine. It is, therefore, just right that these developing scientific clinical subjects should express themselves somewhat earlier in the medical curriculum. By so doing, they emphasize the fact of the dependable importance of laboratory methods in clinical investigation and understanding.

II. There is an increasing number of biologically-minded individuals who are interested in medicine as biology but who do not care to participate in it to the extent of receiving their doctorate in medicine. They are interested in certain divisions of the medicine curriculum in a more particulate sense. They desire to teach in such divisions or to investigate certain problems which may fall in certain part or parts of the preclinical curriculum. Such students may look forward to obtaining their masters degree or the doctorate of philosophy in such divisions. This type of student is most helpful in several ways. His mere presence makes it necessary for the various departments in the two year medical school to be so developed in terms of personnel and equipment that they can both attract and accommodate him. He helps in raising a department to a university level. The mingling of the usual run of medical students bent on the practice of medicine with such individuals gives to them a finer appreciation of the intellectual reaches of the work they are doing for a definite end, and with an occasional student this leaven of research may linger and be carried by him to the bedside as it should be.

Finally, a department in a two year medical school operating in this manner does a very important thing when it demonstrates to medical students that its thought is not isolated medical thought but biological thought, with ramifications into life processes far removed from human beings. The medical student with such a realization begins to appreciate the abstract and infinitesimally small and to relate himself to what he considers the lower order of things in which beauty and individuality have expressions, even as they may find themselves in him. By such a specific utilization of a department by a university, students may be trained in any of the divisions found in the curriculum of a two year medical school to be scholars for teaching and research. They cannot be separated, or solely for research, whether it be of a detached or applied nature. It

would, therefore, appear from these first two considerations, that a two year medical school, operating even in an isolated manner, may perform very distinct and worth while functions.

III. The nature of the curriculum in a two year medical school is of such a character that it lends itself for other enterprises of a cooperative nature in the general university curriculum. Without a two year medical school or certain of the departments constituting it, a university cannot operate in certain particular and other more general phases of its life. In a specific sense, the curriculum in such a school, acting in conjunction with such departments of the university as zoology, sanitary engineering and sociology, is enabled to offer work of an introductory character in public health and public health administration for county and municipal health officers. This alliance is in effective operation at the University of North Carolina. Such work in no sense constitutes a school of hygiene. Its aim is to give to physicians some understanding of the science of public health and its administration, and to encourage such individuals with general medical information to acquire specific knowledge in this domain of applied biology. In this way the two year medical school is not only immediately effective in advancing public health instruction, but of more importance, a certain number of physicians receiving such information will appreciate its magnitude and desire to have more understanding in this sphere by obtaining their specific degree in public health and hygiene. There are other similar specific relationships which departments in the two year medical school offer for university instruction.

IV. The two year medical school relates itself to the university in a general and indispensable manner at the graduate level of university instruction. Without the availability of the departments in such a school, instruction in the biological and other related sciences at this level would be difficult or impossible.

Botany attains certain of its higher reaches through a detailed study of bacteria and immunological reactions. It would be difficult to conceive of the doctorate of philosophy in zoology without, at least, some general understanding of function as detailed by physiology. The modern anatomical laboratory has long since lost the dominance of the cadaver, and is, in truth, a laboratory of experimental zoology and comparative anatomy in which graduate instruction in structure should be carried on liberally. Pathology no longer contents itself with a gross specimen or even in a study of cellular changes in the sense employed by Virchow. It has advanced through its attempt to understand intricate physicochemical changes in cells, especially their meaning. This newer cytology of living cells offers immense opportunities for specific and advanced instruction. Pharmacology

is no longer primarily concerned with the use of drugs in the treatment of diseased states. It is interested in the effect of a variety of organic and inorganic chemical substances on living cells, whether isolated or grouped together for a particulate function in the form of an organ. It, therefore, takes its place at the graduate level of instruction in an attempt to understand living processes in a wide variety of lower forms of life. It was through such studies that Jacques Loeb made many of his contributions to the general physiology of both animals and plants. Biological chemistry through research has attained such a position of significance in both the medical and general university curriculum that it becomes difficult to know just where to locate it.

In this very brief survey of the two year medical school and university education, it has been established that such a unit not only has a definite place, and functions effectively in a medical sense, but that it builds itself into university education as a whole and is, furthermore, indispensable as isolated departments for the furtherance and completion of certain definite types of university instruction. Such schools, therefore, must be maintained with their various departments at a university level of excellence, and at the same time so relate themselves to one another and to the clinical aspects of medical education as to be effective both specifically and generally in the structure of a university.

CORRECTIONS

The following corrections should be made in the paper by Dr. Adolf Meyer, entitled "Psychobiology in the First Year of Medical School" published in the JOURNAL, November, 1935, pp. 365-372:

P. 369: The second line of the paragraph beginning "How many of us . . ." which reads, "usually call by the results without detail, such as flunking of an exam—" should be transposed upward to be the third line of the paragraph on the same page beginning, "Yet it is just this kind . . ."

In the fifth line from the bottom of this page, the words "do not have" (following the first word in the line,—forty) should be deleted and be replaced by the words "come with."

P. 370: In the sixth line from the top of the page, the word "unconsciousness" should read "Unconscious."

P. 372: In the third paragraph, beginning "If, then, . . ." the first two words in the second line, "into the," should be deleted.

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The Toronto Meeting

The annual meeting of the Association of American Medical Colleges held in Toronto, October 28-30, 1935, was outstanding from every point of view. The local arrangements were perfect and gave much pleasure and enjoyment to the visitors. The attendance was the largest in the history of the Association; more colleges were represented than at any previous meeting. Only five colleges were not represented out of a total of eighty-one members. These seventy-six colleges sent more than 100 delegates.

The attendance at the sessions exceeded the two hundred mark, another record.

Besides delegates from member colleges, many other medical schools were represented, both from Canada and from the United States, and about fifteen colleges of arts and sciences were represented by one or more delegates each. This was the first time that these colleges sent delegates.

The program of the first session was devoted entirely to a discussion of the proper training for the study of medicine both from the standpoint of the arts college and the medical school. The arts colleges represented in the program were Wesleyan University, Middletown, Connecticut; Oberlin College, Oberlin, Ohio, and Northwestern University, Evanston, Illinois. The papers read were excellent expositions of the thoughts of the educators and were received with unanimous approval. Thus there was, for the first time, established a direct contact with the arts colleges, one which holds much promise for future cooperation between the arts colleges and the medical schools. The results should be apparent in the

better preparation for the study of medicine of future applicants for admission to medical schools.

The carrying on of the aptitude test as a permanent activity of the Association was fully justified by the report of a special committee which had been appointed in 1934 to make a study of the value of this test.

Atlanta, Georgia, was chosen as the place of holding the 1936 annual meeting. The Executive Council set the time of meeting for October 26, 27 and 28. The Atlanta Biltmore will be headquarters. Emory University School of Medicine will be the host.

♦ ♦

Officers for 1935-1936

Dr. John Wyckoff, New York University College of Medicine, assumed the presidency of the Association. Dr. E. Stanley Ryerson, University of Toronto Faculty of Medicine, was elected president-elect; Dr. Russell H. Oppenheimer, Emory University School of Medicine, vice-president; Dr. Fred C. Zapffe, Chicago, was re-elected secretary; Dr. A. C. Bachmeyer, University of Chicago, was elected treasurer. Drs. W. C. Rappleye, Columbia University College of Physicians and Surgeons, and Maurice H. Rees, University of Colorado School of Medicine, were elected members of the Executive Council.

Executive Council: The membership of the Executive Council for 1935-1936 is as follows: Dr. John Wyckoff, chairman; Dr. E. Stanley Ryerson; Dr. Ross V. Patterson, Jefferson Medical College; Dr. Russell H. Oppenheimer; Dr. W. C. Rappleye; Dr. C. W. M. Poynter, University of Nebraska College of Medicine; Dr.

Maurice H. Rees; Dr. H. G. Weiskotten,
Syracuse University College of Medicine.

♦ ♦

Resolution in re Two Year Schools

Anent the action taken last September by the Council on Medical Education and Hospitals of the American Medical Association to remove from its list of approved schools all schools of medicine offering only the first two years of the medical course on and after July 1, 1938, The Association of American Medical Colleges adopted the following resolution without a dissenting voice:

"RESOLVED, that the secretary be instructed to advise the Council on Medical Education and Hospitals of the American Medical Association that the Association of American Medical Colleges requests the Council to reconsider its action upon the two-year medical schools and to classify such schools individually on their respective merits."

This resolution was presented by Dr. William Pepper, dean, School of Medicine University of Pennsylvania and was seconded by Dr. W. C. Davison, dean, Duke University School of Medicine, and Dr. Alan M. Chesney, dean, Johns Hopkins University School of Medicine.

At a meeting of the Council on Medical Education and Hospitals held December 14, this action on the two-year schools was rescinded. They will be considered individually as is being done with the four-year schools.

♦ ♦

Intern Placement Bureau

At the annual meeting it was definitely decided to proceed with plans to establish a volunteer intern placement bureau. This bureau will assist graduates in securing internships and hospitals in securing interns if desired. The bureau will also give information to hospitals regarding the scholastic record of prospective interns if requested to do so.

The three hospital associations, the American Hospital Association, the American Protestant Hospital Association and the Catholic Hospital Association, have appointed committees to cooperate with this Association in planning for the successful operation of the bureau. It is planned to hold a joint meeting of these committees in Chicago next February at the time of the annual congress on medical education and licensure for a discussion of the plans outlined and, if possible, their adoption. There is a real need for this bureau. Its establishment is assured.

♦ ♦

Government Aids Medical Students

Government money has been earmarked for monthly wages to needy students who will work part time. The Education Division of the Federal Works Progress Administration is the ultimate arbiter in questions of procedure.

To come under the plan, medical students must attend a school which meets requirements, i.e., non-profit making and tax-exempt.

Part-time jobs pay an average of \$15 a month for undergraduate students, \$25 a month for first-year graduate students, and \$30 a month for those who have completed one year of graduate work. The peak pay for each class is, respectively, \$20, \$30, and \$40 a month. The stipends are given for socially desirable work, such as clerical, library, research, adult education, recreation, and other activities that increase the usefulness of the college to the community.

♦ ♦

Atlanta, 1896

In 1896, the Association of American Medical Colleges held its sixth annual meeting in Atlanta, Georgia, under the presidency of Dr. William Osler, then professor of medicine in Johns Hopkins University.

College News

Duke University School of Medicine

October 31, November 1 and 2 a post-graduate course in gastro-intestinal diseases was held at Duke Hospital. Lectures were given by the following: Dr. James S. McLester, president of the American Medical Association, Birmingham, Ala.; Dr. Thomas R. Brown, Dr. Harvey B. Stone and Dr. Dean Lewis, of the Johns Hopkins University School of Medicine; Dr. Walter C. Alvarez and Dr. Byrl R. Kirklin, of the Mayo Clinic; Dr. Hugh H. Trout, of Roanoke, Va.; Dr. William Weston and Dr. LeGrand Guerry, of Columbia, S. C.; Dr. Arthur M. Shipley, University of Maryland School of Medicine; Dr. Walter B. Martin, of Norfolk, Va.; Dr. Martin E. Rehfuess, of the Jefferson Medical College; Dr. Robert L. Payne, president of the Southern Surgical Association, Norfolk, Va.; Dr. Thomas T. Mackie, of New York City; Dr. Fred W. Rankin, of Lexington, Ky.; Dr. Frank K. Boland, of Emory University School of Medicine, Atlanta, Ga.; Dr. A. J. Carlson, of the University of Chicago, and John S. Horsley, of Richmond, Va.

November 8, Dr. I. Wm. Nachlas, of the Johns Hopkins Hospital, gave a clinic on arthritis at the Duke Hospital.

♦ ♦

University of Texas Medical Branch

NEW APPOINTMENTS: Dr. Jarrett E. Williams, adjunct professor of pathology; Dr. William B. Sealy, instructor in anatomy; Dr. Felix Paquin, associate professor of biochemistry.

Dr. William S. Carter, dean, was guest of honor at a banquet given by alumni and former students.

Marquette University School of Medicine

Appointments: Dr. John E. Mulsow, assistant clinical professor of laryngology, otology and rhinology; Dr. Armand J. Quick, assistant professor of pharmacology; Drs. Forrester Raine and Eugene A. Smith, assistant clinical professors of surgery. Mr. Theodore Wiprud, executive secretary of the Medical Society of Milwaukee County, has been appointed lecturer in medical economics.

♦ ♦

University of Cincinnati College of Medicine

Mrs. Louis N. Stix donated \$2,500 to create the Louis N. Stix Research Fund in internal medicine.

Mrs. Alfred K. Nippert added \$1,000 to the Gamble Fund in the department of bacteriology.

The Union Central Life Insurance Co. gave \$500 for the hepatic research fund in biochemistry.

♦ ♦

Temple University School of Medicine

Dr. Lawrence Weld Smith has been appointed professor of pathology, the chair left vacant by the death of Prof. John I. Fanz.

Dr. Smith is a graduate of Harvard Medical School. He was instructor in pathology at Harvard, professor of pathology and bacteriology in the University of the Philippines, later assistant professor of pathology at Harvard and subsequently associate professor of pathology at Cornell University Medical School.

Dr. Ernest E. Aegerter, a graduate of the School of Medicine, University of Pennsylvania, has been appointed instructor in pathology.

University of Wisconsin School of Medicine

A fund of \$7,800 has been donated by E. R. Squibb and Sons Company, New York, for research on cyclopropane. The work will be under the direction of Dr. Ralph M. Waters, professor of anesthesia.

♦ ♦

Medical College State of South Carolina

The Founder's Day lecture on the occasion of the one hundred and eleventh anniversary of the founding of the college was delivered by Dr. David Riesman of Philadelphia. His subject was "The Clinical Approach."

♦ ♦

Harvard Medical School

Dr. A. Baird Hastings, professor of biochemistry, University of Chicago, has been appointed Hamilton Kuhn professor of biological chemistry, succeeding the late Dr. Otto Folin.

♦ ♦

Medical College of Virginia

NEW APPOINTMENTS: Dr. Ernest Fischer, department of physiology; Mr. John E. Davis, physiology; Dr. Paul Kimmelsiel, department of physiology.

Construction of the new laboratory and outpatient department building is well under way. It is planned to have this building ready for occupancy in the fall of 1936 at the time of the beginning of the next academic session. The building and new equipment will cost about \$550,000. Four of the nine floors will be devoted to outpatient activities and five floors to teaching and research, especially for the departments of biochemistry, bacteriology, clinical pathology, general pathology and preventive medicine.

Construction will be begun soon on a new central heating plant to cost about \$150,000 and a laundry costing about \$60,000.

Woman's Medical College

New appointments: Dr. Esther M. Greisheimer, formerly associate professor of physiology, University of Minnesota, professor of physiology; Dr. Hartwig Kuhlbeck, formerly professor of anatomy at the University of Breslau, Germany, acting professor of anatomy; Ben King Harned, Ph.D., formerly chief in the division of pharmacology, University of Tennessee College of Medicine, professor of pharmacology; Versa Viola Cole, Ph.D., formerly research assistant, Ohio State University College of Medicine, assistant professor of pharmacology; Marion Fay, Ph.D., formerly lecturer of chemistry, University of Texas School of Medicine, professor of physiological chemistry; Marie Andersch, Ph.D., formerly of the pathological chemistry laboratory, University Hospitals, State University of Iowa, assistant professor of physiological chemistry.

Dr. Mary Bickings Thornton, formerly part time professor of anatomy at the college, was made professor emeritus. To improve the facilities of the library a full time librarian has been appointed.

♦ ♦

University of Virginia Department of Medicine

Dr. Sydney W. Britton, professor of physiology, has been given a grant of \$15,000 by the Rockefeller Foundation for research on the adrenal glands. The grant has been made to cover a three year research program.

A postgraduate course in ophthalmology and otolaryngology, sponsored by the University of Virginia at the request of the Virginia Society of Otolaryngology and Ophthalmology, was given during the week of December 2-7. Among those who gave lectures or held clinics were: Dr. C. C. Coleman, professor of neurological surgery at the Medical College of Virginia; Dr. Isador Friesner, otologist, Mt. Sinai Hospital, New York City;

Dr. E. Ross Faulkner and Dr. Ferris Smith, Grand Rapids, Michigan, Dr. J. R. Page, Surgeon Directors, Manhattan Eye, Ear and Throat Hospital, New York City; Dr. Bernard Samuels, professor of ophthalmology, Cornell University Medical College; Dr. E. B. Burchell, Eno Laboratory, New York Eye and Ear Infirmary; Dr. T. B. Holloway, Graduate School of Medicine, University of Pennsylvania; Dr. Albert Cowan, Graduate School of Medicine, University of Pennsylvania; Dr. Emory Hill, professor of ophthalmology, Medical College of Virginia, Richmond; Dr. C. S. O'Brien, professor of ophthalmology, State University of Iowa; Dr. Carl Speidel, professor of anatomy, University of Virginia; Dr. Fletcher D. Woodward, professor of otolaryngology, University of Virginia; and Dr. O. V. Batson, professor of anatomy, University of Pennsylvania. Thirty-eight doctors registered for the course.

The sixteenth postgraduate clinic conducted by the University of Virginia Hospital in cooperation with the Department of Clinical and Medical Education of the Medical Society of Virginia was given November 15. Forty-four physicians were in attendance. At the morning session Dr. J. E. Wood gave a lecture on "Pregnancy and Hypertension;" Dr. V. W. Archer spoke on "Present Day Treatment of Malignant Disease;" Dr. Staige D. Blackford spoke on "Indigestion," and a clinico-pathological conference was led by Dr. J. C. Flippin and Dr. James R. Cash. At the afternoon session a surgical clinic was held by Dr. Carrington Williams, of Richmond, Virginia. The program was concluded with ward rounds and a round table discussion.

At the meeting of the University of Virginia Medical Society held November 25, Dr. H. E. Sigerist, professor of the history of medicine, Johns Hopkins University, gave a lecture on "Primitive Medicine."

An E. R. Squibb Scientific Fellowship

in physiology, with a stipend of \$1,800, has been awarded to Dr. Herbert Silvette, instructor in the department of physiology.

The Committee in Aid of Displaced German Scholars has contributed the sum of \$1,000 toward the maintenance of Dr. Maximilian Ehrenstein, a research worker in the department of physiology.

At the meeting of the University Medical Society held December 2, Dr. O. V. Batson, professor of anatomy, University of Pennsylvania, gave a lecture on "The Anatomy of the Head and Neck." December 9, Dr. Warren T. Vaughan, of Richmond, Virginia, spoke on the subject of "Migraine."

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Johns Hopkins University School of Medicine

Charles E. Dohme Memorial Lecture-ship: The eleventh course of lectures was given by Dr. James A. Gunn, professor of pharmacology and director of the Nuffield Institute of Medical Research of the University of Oxford, November 6, 7 and 8, 1935. The subjects of the lectures were: Harmala alkaloids and their derivatives; reactions of uterine muscle and pharmacologic syndromes.

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West Virginia University School of Medicine

Dr. Simon B. Chandler, associate professor of anatomy in Loyola University School of Medicine, has been appointed professor and head of the department of anatomy.

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University of Pennsylvania School of Medicine

Dr. Carl E. Bachman, Montreal, has been appointed assistant professor of obstetrics and gynecology. Drs. Edward H. Campbell and Harry P. Schenck have been promoted to assistant professors of otolaryngology.

Vanderbilt University School of Medicine

The first award for scientific exhibits at the meeting of the Southern Medical Association held in St. Louis, November 19-22, was given to the exhibit presented by Drs. E. W. Goodpasture, C. D. Johnson and G. John Buddingh of the department of pathology. This exhibit presented by means of translucent films, a photographic representation of the production of anti-smallpox vaccine in incubating hen eggs, and an illustration of experimental mumps in monkeys.

Investigations in the department of pathology during the past few years, have demonstrated the possibility and practicability of producing bacteria-free anti-smallpox vaccine by the method presented, and have shown that the cause of mumps is a filterable virus which is infectious for monkeys, so that this disease may be reproduced and studied in these animals.

Arrangements were made by the League of Nations for the following prominent health officials and professors from Europe to visit the United States, and on November 12, they visited the Department of Preventive Medicine and Public Health; Dr. L. S. Fridericia, University Institute of Hygiene, Copenhagen, Denmark; Dr. F. G. Boudreau, League of Nations, Geneva, Switzerland; Dr. Jacques Parisot, Institute of Hygiene, Nancy, France; Dr. Rietz, Chief Medical Officer of Health, Stockholm, Sweden; Professor R. M. F. Picken, Institute of Preventive Medicine, Cardiff, South Wales, Great Britain; Dr. H. van der Kaa, Chief Health Inspector of the Netherlands, The Hague; and Dr. B. Borcic, School of Hygiene, Zagreb, Yugoslavia. They were accompanied by Dr. J. O. Dean of the United States Public Health Service, Washington, D. C., and Dr. Fred Strain, Tennessee Valley Authority Health Section, Wilson Dam, Alabama.

Other visitors to the Department of Preventive Medicine and Public Health during the month of November were: Dr. W. W. Peter, medical director, Navajo Area, Albuquerque, New Mexico; and Dr. T. J. LeBlanc, Professor of Preventive Medicine, University of Cincinnati, Cincinnati, Ohio.



Stanford University School of Medicine

September 1, 1935, Dr. Adelaide Brown became lecturer in pediatrics, emeritus, and Dr. Arthur A. O'Neill became assistant clinical professor of medicine, emeritus.

Dr. Alvin Joseph Cox, Jr., instructor in pathology, has been awarded an exchange instructorship in pathology at the University of Freiburg, Freiburg, Germany. Dr. Klaus Rosenkranz of Freiburg is spending a year in pathology at Stanford.

Promotions and New Appointments: James P. Baumberger, from associate professor to professor of physiology; Maurice L. Tainter from associate professor to professor of pharmacology; Charles E. Clifton, from assistant professor to associate professor of bacteriology; John Field II, from assistant professor to associate professor of physiology; Victor E. Hall, from assistant professor to associate professor of physiology; John K. Lewis, from assistant professor to associate professor of medicine; Charles W. Barnett, from instructor to assistant professor of medicine; Edward Leef, from instructor to assistant professor of medicine (radiology); James B. McNaught, from instructor to assistant professor of pathology; Andrew B. Stockton, from instructor to assistant professor of pharmacology; Robert D. Dunn, from clinical instructor to instructor in obstetrics and gynecology; William G. Gordon, instructor in chemistry; Arnold J. Lehman, from assistant to instructor in pharmacology;

Eric Liljencrantz, from assistant to instructor in medicine (radiology); Robert A. Phillips, instructor in physiology; Joseph Catton, from associate clinical professor to clinical professor of medicine (neuropsychiatry); Thomas G. Inman, from associate clinical professor to clinical professor of medicine (neuropsychiatry); Philip H. Pierson, from associate clinical professor to clinical professor of medicine (tuberculosis); Jay Marion Read, from associate clinical professor to clinical professor of medicine; Lovell Langstroth, from assistant clinical professor to associate clinical professor of medicine; Arne Ely Ingels, from clinical instructor to assistant clinical professor of medicine (dermatology); Aubrey G. Rawlins, from clinical instructor to assistant clinical professor of surgery (otorhinolaryngology); Joseph H. Boyes, from assistant to clinical instructor in surgery; Evelyn Hart Case, from assistant to clinical instructor in surgery (anesthesia); Donald W. deCarle, from assistant to clinical instructor in obstetrics and gynecology; Emelie Andersen DeEds, from assistant to clinical instructor in surgery (anesthesia); George V. Kulchar, from assistant to clinical instructor in medicine (dermatology); Rexford W. McBride, from assistant to clinical instructor in obstetrics and gynecology; Dorothy L. Morse, from assistant to clinical instructor in obstetrics and gynecology; Wrenshall Oliver, from assistant to clinical instructor in medicine (neuropsychiatry); Walter Scott Polland, appointed clinical instructor in medicine; Gaynelle Robertson, from assistant to clinical instructor in surgery (opthalmology); Charles Albert Shumate, from assistant to clinical instructor in medicine (dermatology); Harry A. Somerfield, from assistant to clinical instructor in obstetrics and gynecology.

The fifty-fourth course of popular medical lectures consists of six lectures, one

every two weeks. The first lecture will be delivered January 3; the last, March 13. The subjects of these lectures and the speakers are: "Sinusitis, Allergy and the Common Cold," Dr. Edward C. Sewall; "Public, Patient, Physician and Health Insurance," Dr. T. Henshaw Kelly; "Superstitions, Theories and Facts of Menstruation," Dr. C. Frederic Fuhlmann; "Success of Control of Communicable Diseases in San Francisco," Dr. George H. Becker; "Value and Limitations of Plastic Procedures," Dr. Albert A. Davis; "Present Conceptions of the Nature of the Mind," Dr. Thomas G. Inman.

These lectures will be delivered in Lane Hall. Any one who is interested in these subjects may attend. Admission is free.

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Loyola University School of Medicine

Beginning in October, 1939, the entrance requirements will be increased to three years of college work. Until then the two year requirement will be effective.

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Columbia University College of Physicians and Surgeons

New Appointments: Dr. Harold Alexander Abramson, assistant professor of physiology; Dr. Cornelius G. Dyke, assistant professor of radiology; Dr. Albert Victor Hardy, assistant professor of epidemiology; Dr. Charles Wadsworth Schwartz, associate professor of radiology.

Dr. Nolan D. C. Lewis, director of laboratories at St. Elizabeth's Hospital, Washington, D. C., has been appointed assistant medical director of the Neurological Institute in charge of clinical and clinicopathologic research and professor of neuropathology in the College of Physicians and Surgeons.

General News

Rockefeller Foundation Report for 1934

The Rockefeller Foundation offered £60,000 conditionally to the National Hospital of London for building and equipment purposes. But another £120,000 must be raised within two years. Upon the condition being met, the Foundation will then provide an added £60,000 as an endowment for research in this hospital devoted to nervous diseases.

The Foundation appropriated \$1,026,200 to the Medical Sciences, most of which was toward the development in psychiatry, neurology and related subjects.

Grants for work in psychiatry were made to McGill; Boston State Hospital, Department of Mental Diseases for research on dementia praecox; the University of Colorado School of Medicine for teaching and to the University of Michigan and the Institute of the Pennsylvania Hospital for teaching and research.

In the field of child psychology, funds were given Johns Hopkins; The University of Leiden; The Chicago Area Project and the University of Rochester.

New York University, Northwestern Medical School, Lister Institute of Preventive Medicine (London) and others received grants for work in kindred fields and funds provided toward the annual maintenance of the National Committee for Mental Hygiene.

The total operating budget of the great foundation for the year for Public Health Activities was \$2,200,000.

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M. Carey Thomas Prize

This prize of \$5,000, was awarded by Bryn Mawr College to Dr. Florence R. Sabin of the Rockefeller Institute in recognition of eminent achievement.

Western Division Connaught Laboratories

The Western Division of the Connaught Laboratories of the University of Toronto in cooperation with the University of and Provincial Board of Health of British Columbia was established recently. It is but a tentative arrangement effective but for one year.

The plan is to establish a research center in the British Columbia University coordinating the activities of the three institutions in the fields of bacteriology and preventive medicine, thus extending the field of usefulness for all. With vast distances to be traversed in Canada the ten medical colleges in the dominion have suffered for years in securing frequent contacts such as are possible in the more thickly populated States. Especially is this applicable in the western areas hence this new idea of inter-university and provincial health connection will go far in solving in part the difficulty.

Dr. C. E. Dolman has been appointed Professor of Bacteriology and Preventive Medicine at the University of British Columbia but will carry on as a member of the staff of the Connaught Laboratories as a research worker. Dr. R. J. Gibbons goes west as second in command. Those employed in the Western Division of the laboratories are to have quarters in the Science Building of the University of British Columbia.

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Interns and Residents at St. Elizabeth's Hospital

The U. S. Civil Service Commission announces competitive examinations for positions as junior medical officer at St. Elizabeth's Hospital, Washington, D. C. It is expected that there will be two va-

cancies July 1, 1936, and two Oct. 1, 1936, for internships and about five vacancies for psychiatric residents July 1. The internship consists of a two year rotating service of four months of surgery, four months of acute medical service, four months of chronic medical service, six weeks each of obstetrics and pediatrics (affiliation), three months of laboratory work and six months of psychiatry. Candidates will not be required to report for examination at any place but will be graded on their education and experience. Applicants for the internship must be senior students in a grade A medical school and applicants for the residencies must have been graduated from a grade A medical school not prior to Jan. 1, 1934, and must have completed an accredited internship. Applicants must not have reached their fortieth birthday on the date of the close of receipt of applications. They must be in sound physical health.

Application forms may be obtained from the secretary of the Board of Civil Service Examiners at any first class post office, from the commission at Washington, D. C., or at any district office of the commission in the following cities: Atlanta, Boston, Chicago, Cincinnati, Denver, New Orleans, New York, Philadelphia, Seattle, St. Louis, St. Paul, San Francisco, Honolulu, Balboa Heights, C. Z., and San Juan, Puerto Rico. Applications must be filed not later than December 16.

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Gifts for Research:

General Education Board, \$17,000 for the subdepartment of tropical medicine and the child development clinic of the Neurological Institute. W. K. Kellogg Foundation, \$10,000, for study of rheumatic fever. Rockefeller Foundation, \$2,500 for research in department of practice of medicine and \$750 for the department of psychiatry. E. R. Squibb and

Sons, \$2,250 for fellowship fund in the department of biologic chemistry; \$1,000 for fellowship in the department of anatomy. Commonwealth Fund, \$1,750 for the normal child development clinic in the Neurological Institute. Hartley Corporation, \$1,750 for research in the department of psychiatry. William J. Matheson Foundation, \$1,125 for the Matheson Encephalitis Fund in the department of bacteriology. Louis D. Beaumont Trust, \$1,000 for research in the institute of cancer research. Arthur M. Lampert, \$1,000 for the Louis Wiley Memorial Fund in Neurology.

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Rockefeller Foundation

The retirement of Max Mason, Ph.D., president of the Rockefeller Foundation since 1929, and the appointment of Raymond B. Fosdick, New York, as his successor, have been announced by the foundation, effective July 1, 1936. Mr. Mason, who will devote his time to research in mathematics and mathematical physics, left Wisconsin in 1925 to become president of the University of Chicago, from where he went to the foundation in 1928 as director of the division of natural sciences, and became president in 1929. In addition to becoming head of the foundation, Mr. Fosdick will assume the presidency of the General Education Board. In explanation of the combination of offices, it was announced that the General Education Board plans to expend increasing amounts of its principal funds over a period of years, possibly resulting in their complete exhaustion; meanwhile, to avoid any overlapping of the boards, it was deemed wise to have one administration for the two. Mr. Fosdick, an attorney, has been identified with Rockefeller interests for many years, being a trustee of the organizations he now heads and of the Rockefeller Institute for Medical Research.

Abstracts of Current Literature

Medical Education in the U. S. S. R.

During the period of experimentation in our schools our students often entered the higher educational institutions ill prepared in certain basic subjects. The more systematic training that has been introduced in our lower schools in the past few years has had its immediate reflection in the work of our newly enrolled medical students. There was a tendency for students to select specialties too early, but gradually this situation has been vastly improved.

It is our plan that eventually all young people shall complete ten years of general schooling before undertaking any specialization at all. Since our country is still handicapped by lack of sufficient skilled workers and technicians in every field, we have had to make a temporary arrangement for specialization in certain cases after the seventh year. For this purpose we have developed the "technicum," a sort of technical or professional high school. In the medical field there are in the R. S. F. S. R. alone more than 150 of these technicums attended by about 40,000 students who are trained for the less highly skilled posts in the medical profession—as assistants, technicians, inspectors, nurses. In the technicums, as in all Soviet schools, theoretical and practical work are closely combined. The technicums are usually connected directly with some medical institution where the students do regular practical work in connection with their studies. Regular jobs are found for technicum students immediately after graduation. Those showing special aptitudes may, of course, go on to the medical colleges or scientific research institutes, but they are required to do a practical job for a specified period first.

They may also take courses equivalent to college medical courses while continuing their practical work.

Our medical colleges and institutes, which are receiving particular attention now, have a five-year course and may be entered on completion of ten years of regular schooling. Students are carefully chosen by a special commission on the basis of examinations. They receive government stipends which cover all their expenses throughout the entire course. It may be said that the standards of medical education which we inherited from the old régime were good, but facilities were extremely limited. There were only 13 medical colleges in 1913 in all Russia. In 1934, there were already 36 medical colleges in the U. S. S. R., with an enrolment of 48,000. They are situated in all parts of the country, not only in Moscow, Leningrad, Kharkov and other larger cities but in the North Caucasus, Central Asia, Eastern Siberia, Kazakstan and Far Eastern Region.

Certain highly important changes in our system of medical education have been introduced in our medical colleges during the past year on the basis of a governmental decree issued at the beginning of the school term. The decree emphasized that too much attention had been given in recent years to the training of medical specialists in the field of public hygiene at the expense of the curative and prophylactic field and, chiefly, that there was too little time devoted to general medical knowledge.

Accordingly, the decree provides for the establishment in all the medical institutes of the U. S. S. R. of faculties for the teaching of curative medicine, which only in the fifth year shall be divided into specialized courses in therapeutics, sur-

gery, obstetrics and gynecology. Faculties for training pediatricists are to be established in fourteen of the medical colleges. Faculties for training in sanitation, bacteriology and epidemiology and food hygiene are to be established in ten medical colleges, with specialization in one of these branches to begin only in the fifth year. Previously each medical college had three separate faculties—one for general curative and prophylactic medicine, surgery and dentistry, one for public health, sanitation and food hygiene, and one for obstetrics, gynecology and pediatrics. The student could choose one of these to the exclusion of the others. Under the new system this arrangement of separate faculties is permitted only in certain of the colleges, and the number of students enrolling in the special faculties is strictly limited. Thus 75 per cent of the students will be enrolled in the curative faculties, 15 per cent in the special pediatrics faculties and 10 per cent in the special sanitation and hygiene faculties. But for the first two and a half years students in all the faculties will receive the same general theoretical training. Students of the faculty of curative medicine may specialize after they have completed the five-year course by serving as interns in the clinics of the institutes for advanced training, medical institutes or hospitals.

The decree also outlines a plan for progressively increasing the number of medical students enrolled each year from 15,610 in the fall of 1934 to 103,610 in 1937. This program is a definite part of our second five-year plan and subject to as strict fulfillment as are our schedules for production of heavy industry, consumers' goods, and so on. It is based on careful calculations of our material and human resources and on the expected progress from year to year.

In general, it should be noted that in our medical training practical work is combined with theoretical work every

step of the way. During the first year the student assists in minor medical and surgical cases; during the second, does actual nursing, and during the last three years, practical medical work in hospitals, polyclinics and dispensaries. Before graduation all students are required to complete a "diploma project." A special period is allotted for this, after the completion of the regular course. For this purpose the students are allowed at least two months free of all other work. The project consists of an analysis of clinical material gathered by the student in whatever special field he chooses and a correlation of the student's own observations with the theoretical training received. The material must be prepared in literary form and illustrated with appropriate charts and diagrams. Arrangements are made for the student to receive regular assistance and advice from a professor of the faculty under which he has been studying and to accompany the professor in his rounds. Professors, incidentally, are usually engaged in active work. When the project is completed, the student is required to make a report on his findings before a special commission. Examinations are held by state boards appointed by the various Commissariats for Health, and licenses to practice or to carry on further scientific work issued on the results.

In order that all physicians should continue the regular study of modern developments in the field of medical science and keep constantly abreast of the latest achievements in their particular field, we require that physicians, in the centers where there are facilities, take periodic courses to brush up their knowledge while continuing their regular work, and that doctors in the rural sections or remote parts of the country return to the city to take special courses every three years. For this purpose there exists in Moscow a Central Institute for Advanced Training of Physicians with courses covering

fifty specialties, and such institutes are being established at central points all over the country. The regular salary of the physician is paid to his family during this period; he himself receives a stipend for his expenses, and his transportation and room rent are provided for by the state. Attendance at lectures is required, and examinations are held at the end of the course. On graduation, young doctors are usually sent for three years' practical training in the province, on completion of which they come back for several months at the institute before entering upon their regular jobs. Thousands of doctors have already received training at these institutes, and it has now been made obligatory for every member of the medical profession to attend them.—TROYANOVSKY, A. A.: *Science*, Aug. 15, 1935.



Distribution of Medical Students in Germany

The matriculation of medical students at German universities for the summer semester 1934 (which included 890 foreigners) numbered 23,028. The largest proportion of these students are derived from the families of middle-rank officials (5,892) and merchants and industrialists (4,547). Only 2,391, or 10.8 per cent, are the sons of physicians, while about 30 per cent of the fathers of these students had a complete university training. It is evident, therefore, that our future physicians are recruited mainly from nonmedical circles. Slightly more than 1,000 students are from the families of agriculturists—chiefly from those of middle rank. Children of laborers have a comparatively high representation (315), being greater, for example, than the children of pharmacists (214). About 25 per cent of the women medical students are the daughters of higher officials and a further 25 per cent are from the families of middle-rank officials. The University of Munich

has the highest representation of medical students (2,528); the University of Berlin comes next with 2,273 students; next in descending order come the universities of Würzburg, Königsberg, Bonn and Heidelberg. The University of Giessen has the smallest representation. Of the 890 foreign students (120 women), 517 are from Europe, most of them from Poland, Roumania, Danzig and Switzerland. There are only nine students from England and only one from France. From Asia there are seventy-one, forty-two being from China. Africa has furnished thirteen and North America 207, 206 being from the United States. From South America come forty-six, twenty-four from Peru. From the religious point of view, 327 foreigners were of the Protestant faith, 209 were Catholics and 173 were Jewish.—J. A. M. A., Nov. 16, 1935.



Elective Courses in Medical Curriculum

Selective courses were offered to the students of Tulane in their senior year two years ago. In all ten courses were offered. Eight courses had to be taken during the senior year. Courses 1, 2 and 3 were devoted to the subject of medicine; courses 4 and 5 were surgical—one course, general surgery entirely, the other course including with surgery, urology and orthopedics. Course 6 was gynecological and course 7 dealt with obstetrics. Course 8 was devoted solely to pediatrics and course 9 offered ophthalmology and otolaryngology for a period of a month. Course 10 included preventive medicine, tropical medicine, hygiene and public health. It must not be understood that during this entire time the students were devoting their entire attention to the particular subject with which the course dealt.

There were being conducted at the same time, two hours each day, amphitheater clinics and lectures, and three

times a week seminars in medicine, surgery and obstetrics-pediatrics. The work in the physiologic group, which includes biochemistry, physiology and pharmacology, is given during the spring trimester of the freshman and the autumn trimester of the sophomore year. The regular work is for a period of approximately seventeen weeks. Following that for a period of five weeks special courses are given which the students are allowed to select up to a certain point. Forty per cent of the class can select a course in physiology, 40 per cent in biochemistry and 20 per cent in the department of pharmacology. It has been found that the students secure, for the most part, their first choice, at least their second choice. It has been found that the courses offered in physiology are the most popular. Seventy per cent of a class of 106 selected one of these courses; in biochemistry, 22 selected this branch of medicine as their first choice, and 14 selected pharmacology. The courses in physiology are particularly popular because of what may be spoken of as their clinical appeal. One of these courses is given in radiology and one in endocrinology. In the department of pharmacology the courses are of course based upon pharmacologic subjects and are of interest principally to the man who has a more mature mind and an investigative mind. In the department of biochemistry the extra courses are in considerable part different from the other courses. The departmental head gives a lecture in the course and then follows through, except with the unusual student, more or less advanced work in biochemistry.

The unusual student is given the opportunity of doing special investigative work. In the courses in physiology and biochemistry much of the work is done by the students themselves. They work with animals on an unknown problem; they are doing, in other words, truly research work. About one-half of the time

is devoted to the laboratory work and the remaining time is given to reading and special study of the subject matter with which they are dealing throughout their experimental procedures. There has been considerable divergence of opinion in regard to the value of these courses.

One of the department heads feels that too small a percentage of the sophomore students is ready to profit by the liberality of the method. This is unfortunate, but it is the feeling of this man, nevertheless, that this pedagogic method is best for a very large fraction of the class. The head of another department feels that they are giving to the men an opportunity, which they do not have at any other time during their medical course, to come in contact with investigative medicine. He thinks that in some respects many of the men are not up to this type of instruction; that they are immature and that there is a tendency to loaf rather than to go into the subject as deeply as they should. The third departmental head is extremely enthusiastic about the course. He feels that for a period of a few weeks, at least, the students are not being spoon-fed, but they are put largely on their own resources, and that the brief training that they get in experimental methods, in the handling of a problem which requires a certain amount of originality and in the opportunity of studying intensively a particular phase of medicine, more than overbalances the objections that might be made to this particular type of instruction.

My observations lead me to believe that about one-half of the students relish and appreciate this type of instruction; about one-half of them feel that it is time wasted. I do not want to stress too vigorously students' opinions and feelings in regard to pedagogic matters. For the most part, I do not think that they are qualified to evaluate properly methods of teaching. Nevertheless, this factor must be taken into consideration because

a man who has to be driven and is dissatisfied will get but little out of any teaching method. I feel that this method of instruction to the sophomore class is really stimulating, truly helpful, and exceedingly beneficial, and even though only a small percentage of the class appreciate it, nevertheless that is good for all of the class.

My conclusion concerning selective courses for senior students of medicine is that they should be of value to the man of mind sufficiently mature to be taking real university training; the medical student is no longer a collegian. He should have a sufficiently broad point of view to appreciate learning by doing, to think highly of knowing thoroughly certain features of a subject about which it is obviously impossible to know all. The greatest objection to my mind in regard to the method that we employed in offering selective courses to the senior class was that there was not a greater range in the selection of courses in which the students might participate than in the schedule that was prepared. Lastly, I cannot help but feel that the average medical student at the present time is not prepared for a type of training which does not detail how every hour of the teaching day, week, semester and year must be filled.—J. H. MUSSER, *Southern M. J.*, Dec. 1935, p. 1170.



Increase in Physicians in Vienna

The municipal bureau of health, which exercises supervision over the medical personnel of Vienna, reports that the number of physicians is still on the increase. At the end of 1930 there were 4,651 physicians in Vienna, 475 of whom were women. At the end of 1934 there were 4,732 physicians, 500 of whom were women. The dentists show a similar increase, there having been in 1930 1,726 physician-dentists (zahnärzte) and "den-

tists" (zahntechniker) combined, while in 1934 the number had increased to 1,823. There is thus one physician to every 380 inhabitants, and one physician-dentist or "dentist" to every thousand inhabitants. It should be noted, however, that of the 4,732 registered physicians about 900 are hospital physicians who have no private practice and who, after completion of their hospital service, will likely settle in the provinces, outside of Vienna.—Vienna Letter, Sept. 8, 1935.—J. A. M. A., Nov. 2, 1935.



Across the Desk

The title of "doctor," which ought to be a name of honor and distinction, has been so abused by every kind of quack and charlatan that one thoughtful medical writer wonders if it is not time for the physicians to do something about it. True, it is not possible legally to prevent a doctor of this or a doctor of that from hanging out a sign reading: "Dr. John Doe." But something else is possible, and the editor of the *Rhode Island Medical Journal* has a plan that is at least worth thinking about. He suggests that the real physicians, the true doctors of the healing art, drop the title Dr. from their office signs and append only the degree M.D. If all physicians do this, the public will be quick to sense the fact that the latter sign proclaims the true man of medicine, and that the riff-raff, the rag-tag and bob-tail of muscle-thumpers and bone-wrenchers are sticking to Dr. because they have no M.D. to display.

It is unfortunate that our language has no other name that goes lightly and readily on the tongue for the man of healing. Germany has *Arzt* and France has *Médecin*, but we stick to "doctor," which may mean anything from a theologian to a veterinarian. The word is about six hundred years old, and was originally applied to the learned in general, such as the early "fathers" of the Christian

church, who were all doctors. Since then it has had some pretty rough usage, and we even find a ship's cook commonly called doctor. The "doctor-fish" has a sharp spine on his tail, like a surgeon's lancet, which he uses with deadly skill, and the "blue-doctor" is an angler's fly. A wide and varied circle to share the title! These and other interesting facts about the physician's cognomen were given in the inaugural address of President Herbert R. Hurter of the Liverpool Medical Institution, whose hobby is etymological research.

The medical practitioner was formerly known as a leech, but it happened that a bloodsucking animal bore the same name, so the doctors gave it up. They have been called medics, medicos, medicians, medicianers and mediciners but, as Dr. Hurter slyly remarks, never medici.

The word surgeon, too, is about six centuries old and has been spelled in thirty different ways. That does not include its classical sounding synonym *chirurgion*, either, which has had fifteen different spellings. Any readers who wish to try to make forty-five variations on these two words are at liberty to do so. And, after all, it seems that etymologically the word surgeon means simply a handy-man, so there is no need for any of that ilk to feel too high and mighty about it. Our language is ever shifting and changing, ever fluid, never at rest, and it may be that the time is come for the men of medicine to adopt some new title that will distinguish them from the swarm of imitators who curse our land like a plague. The field is open and the cause is of the best.—*New York State J. Med.*, Oct. 15, 1935.

Book News

Textbook of Bacteriology

By Thurman B. Rice, A.M., M.D., Professor of Bacteriology and Public Health, Indiana University School of Medicine. W. B. Saunders Company, Philadelphia. Price, \$5.

A comparatively short text, one which will give the student the real fundamentals necessary for the study of this important subject. Descriptions of cultural characteristics and instructions for laboratory technic are short; long theoretical discussions of controversial subjects are conspicuous by their absence. Practically everything needed for the control and treatment of bacterial diseases is presented clearly and concisely. No effort is made to cover all of the subject thoroughly, but the student who wishes to go farther is directed where to go and what to do to enlarge his knowledge in this field. A good book for the student.

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Streamline for Health

By Philip Hawk. Harper & Brothers, New York. 1935. Price, \$2.50.

A very humorous but scientific discussion of "reducing," reducing diets, fads and fancies, a book which every physician will enjoy reading and every layman will receive much profit from, especially the ladies, if they wish to know the truth about reducing and how to reduce properly, provided reduction in weight is necessary or indicated. Many misstatements published by "reducing" faddists are discussed from the standpoint of physiology and science and the fallacies are exposed by one who has given much of his time and knowledge to this phase of life and living. The jocular vein in which the book is written makes it as enjoyable as reading Joe Miller's

Joke Book, but with a far more beneficial result because it points the way to healthful living and thoroughly "debunks" the fantastic claims which have been made by the host of "reducers" and their benighted followers.

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Fasciae of the Human Body and Their Relation to the Organs They Envelop

By Edward Singer, M.D., Instructor in Anatomy, Columbia University, College of Physicians and Surgeons. Williams & Wilkins Company, Baltimore. 1935. Price, \$3.

A correct knowledge of fasciae is as important as a proper knowledge of the organs they envelop. A handy volume for students doing dissection work, also for surgeons. The illustrations are well made and most instructive. This work is a supplement to textbooks on anatomy inasmuch as it covers a field usually slighted in such works, hence fills a real need.

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Pediatric Treatment

By Philip S. Potter, A.B., M.D., formerly Instructor in Clinical Pediatrics, Syracuse University College of Medicine. The Macmillan Company, New York. 1935. Price, \$5.

A manual of the treatment of the diseases of children and infants designed as a reference work especially for the general practitioner and physicians entering the field of pediatrics. The senior student will also find this work helpful during his clinical clerkships inasmuch as the treatment outlined is basic since in the home all treatment must be individualistic. The latest methods of therapeutic procedure are presented. The author's style is clear, concise—without sacrifice of completeness

or thoroughness. The make-up is commendable. The type is large enough to be read easily; the paper is dull finish. The book is of convenient size.

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Snake Hunters' Holiday

By Raymond L. Ditmars and William Bridges, New York Zoological Park. D. Appleton-Century Company, New York. 1935. Price, \$3.50.

In this vigorous and exciting narrative the reader accompanies Raymond L. Ditmars and his co-workers on a tropical expedition in search of snakes, vampire bats, and other rarities for the New York Zoological Park. The planning of the expedition is vividly described, and then the absorbing story of the actual hunt for live specimens in Trinidad and British Guiana unfolds. An interesting feature is the fact that in Dr. Ditmars' participation in the expedition the reader is shown how the professional naturalist works; while equally striking is the initiation of Mr. Bridges, a journalist, into the fascinating and often dangerous technique of snake-collecting and other jungle activities.

Mr. Bridges accompanied Arthur M. Greenhall on the scouting expedition to round up specimens in advance of Dr. Ditmars' arrival. The first quest was in the darksome reaches of caves in Trinidad where lurked the vampire bats. Exciting pages describe their capture, and one chapter describes observations of their actual feeding on live prey. This is only a start, however, for the expedition was notable for the capture of live specimens of the Trinidad giant centipede ("most repulsive creature in the West Indies"), the dread fer-de-lance snake, and many other tropical creatures, until finally a six-foot bushmaster snake was secured, carried in triumph to New York, and placed on exhibition at the Zoological Park.

Most delightful reading, informative

and instructive, for leisure hours. The style is particularly enjoyable. Physicians will find the book extremely interesting.

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Psychology and Life

By Leslie D. Weatherhead, formerly Lecturer in Psychology for the Workers' Educational Association. With a foreword by Sir Henry B. Brackenbury, M.D., vice-president of the British Medical Association, and William Brown, M.D., University of Oxford. The Abingdon Press, Cincinnati. 1935. Price, \$2.

A clergyman stresses the fact that there is a future for "spiritual healing," but success in that direction depends entirely on the highest degree of cooperation between the clergy and the medical profession. The practicing physician deals with the individual person, with health and with human environment, but he has come to see that to help his patients in their distress he must deal with body, mind and spirit; that it is often the psyche quite as much as the body which needs his attention. Cooperation of the doctor and the minister is essential to that end. The author says "religion and psychology are inevitably welded. Psychological troubles are mainly due to a faulty adjustment to life and reality. Religion offers a perfect adjustment." This represents the keynote of his book. There is more need for training of medical students in psychology and more knowledge of some elementary psychotherapeutic methods. The author recommends that these subjects be given a place in the medical curriculum.

♦ ♦

Diseases of the Skin

By Frank Crozier Knowles, M.D., Professor of Dermatology, Jefferson Medical College. 3d Ed. Lea & Febiger, Philadelphia. 1935. Price, \$6.50.

The revision of the text for this new edition has been unusually sweeping. Fully one-third of its contents is entirely

new and the remainder has been thoroughly revised and largely rewritten. Approximately fifty pages have been added to the text and forty-five new photographs have been included. More than fifty variations of new diseases have been incorporated which brings the work fully up-to-date. It now reflects all of the new conceptions and new knowledge in this subject.

Allergy and allergic reactions which have assumed such importance of late are now fully recognized. The part that food plays in eruptive conditions as well as elimination and salt-free diets have been considerably emphasized. The material on both diagnosis and treatment has been extended by the inclusion of many tables for differential diagnosis and numerous prescriptions. A table showing a systematic scheme for the treatment of early syphilis is inserted and the entire section dealing with this disease has been rewritten.

The organization of the book includes an extensive section covering the anatomy and physiology of the skin. The various diseases are then grouped under thirteen chief classes and their definitions, symptoms, etiology, diagnosis, treatment and prognosis are presented in detail. This work now covers every unusual and rare disease as well as all of the commoner conditions. It is, in every respect, fully abreast of the times.



An Introduction to Public Health

By Harry S. Mustard, M.D., Associate Professor in Public Health Administration, Johns Hopkins University. The Macmillan Company, New York. 1935. Price, \$2.50.

This book is designed mainly to orientate the student in the field of public health. It furnishes a background of information and tends to develop a philo-

sophy and perspective. It is purposely brief and does not concern itself with the details of public health administration, nor does it offer suggestions for classroom or field instruction in any of the specialized phases of public health practice. It provides information rather than direction. The subjects covered and the details furnished are those which observation indicates as necessary for the groups for which the book is designed.



Social and Religious Problems of Young People

By Sidney A. Weston and S. Ralph Harlow. The Abingdon Press, Cincinnati. 1935. Price, \$1.75.

This is a book of case studies in social and religious problems. The situations presented are drawn from the authors' experiences.



Prescription Writing and Formulary; The Art of Prescribing

By Charles Solomon, M.D., Assistant Clinical Professor of Medicine, Long Island College of Medicine. J. B. Lippincott Company, Philadelphia. 1935.

The author stresses that many physicians and particularly recent graduates do not possess the knowledge and skill requisite for writing prescriptions. Therefore, he brings before the reader such material as may be helpful in providing a sound, scientific basis for prescription writing. A formulary is given, not to be memorized but by way of illustration of principles involved in the writing of prescriptions and to bring out the simplicity of rational prescribing. He insists that there cannot be any set or standard prescriptions. An index of prescriptions according to symptoms and diseases is presented. The use of serums, anti-toxins, allergens, etc., is discussed.

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